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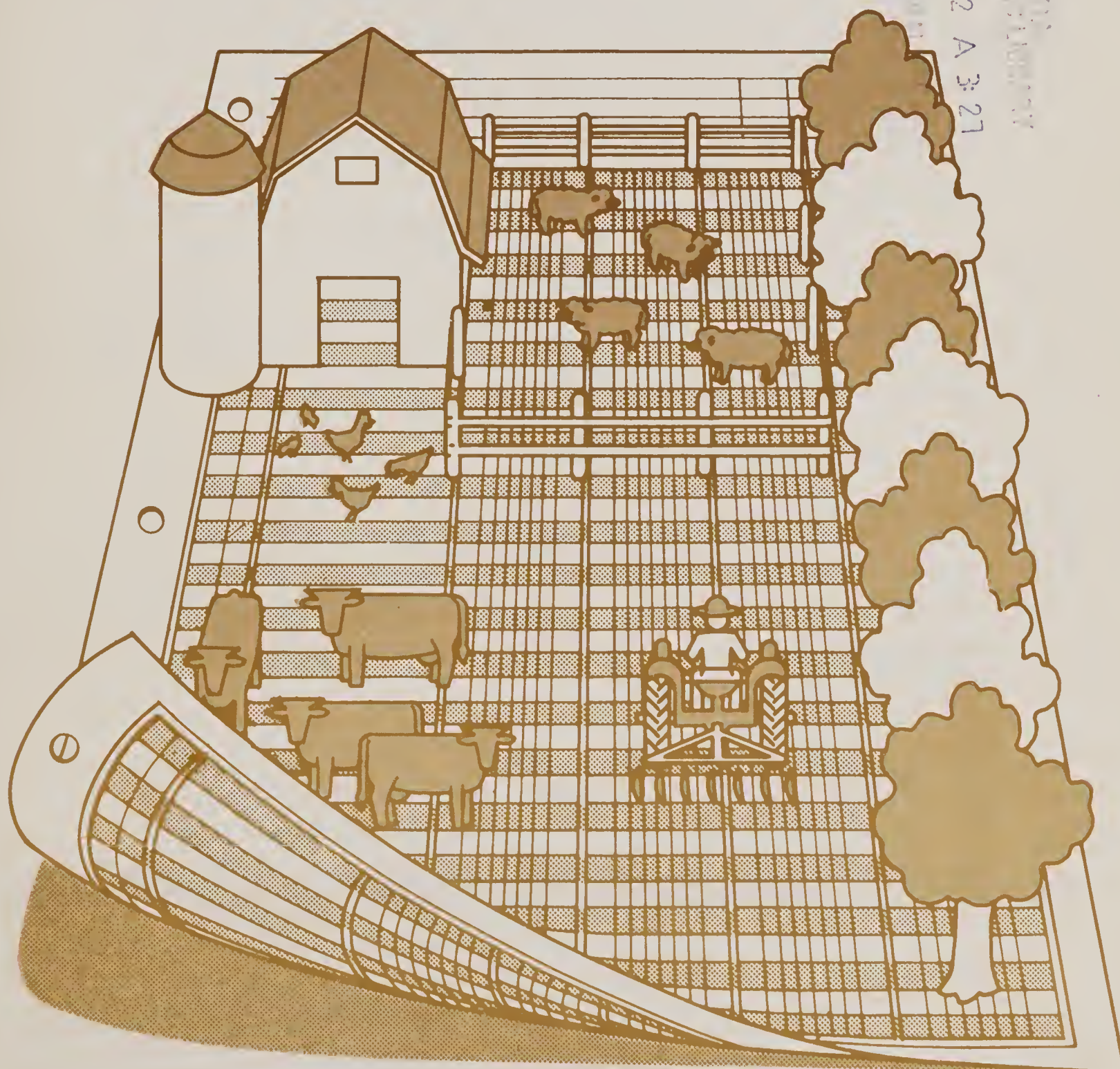
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## Economic Indicators of the Farm Sector

# Costs of Production-- Livestock and Dairy, 1988

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## **Abstract**

Costs of production for most livestock enterprises increased significantly in 1988. Milk production costs increased 12 percent per hundredweight mainly because of an increase in feed prices, a result of widespread drought. Livestock and dairy producers paid higher prices for inputs. Feed prices increased 24 percent and hay prices rose 34 percent. Feed prices had declined by 7 and 5 percent in 1986 and 1987.

**Keywords:** Costs of production, costs and returns, drought, enterprise budgets.

## **Preface**

This is one of five reports in the annual *Economic Indicators of the Farm Sector* series; others are *Costs of Production--Major Field Crops*, *National Financial Summary*, *State Financial Summary*, and *Production and Efficiency Statistics*.

This report contains enterprise cost estimates for 1986, 1987, and 1988, as well as time series data beginning in 1972. The 1988 estimates are preliminary and the 1987 estimates have been updated from the 1987 issue. Some 1986 estimates also have been revised.

For the first time the series has separated livestock and dairy costs of production from crops. The methodology therefore pertains only to livestock and dairy enterprises in estimating livestock and dairy costs of production. This report is prepared by staff of the Livestock, Dairy, and Poultry Branch, Commodity Economics Division, Economic Research Service.

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# Economic Indicators of the Farm Sector

## Costs of Production-- Livestock and Dairy, 1988

### 1988 Production Costs and Returns

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The U.S. Congress, through the Agriculture and Consumer Protection Act of 1973, requires the Secretary of Agriculture to estimate annual costs of producing wheat, feed grains, cotton, and milk. The Economic Research Service (ERS) carries this out and also determines costs for other farm products which compete with these commodities, namely rice, peanuts, soybeans, flax, sunflowers, fed cattle, beef cow-calf, hogs, sheep, and sugar.

This report presents national and regional estimates of livestock and milk production costs and returns. Crop enterprises appear in a separate publication, *Economic Indicators of the Farm Sector: Costs of Production--Major Field Crops*. The estimates are in the form of an enterprise budget that is divided into three sections: gross value of production, cash expenses, and economic costs. The budgets are based on weighted-average estimates of all costs associated with a particular enterprise. The effects of Government programs are included implicitly in prices and explicitly in some cases (dairy assessment, wool, and unshorn lamb payments). Federal emergency feed programs were made available to dairy and livestock producers in 1988 in response to the drought. Adequate data were unavailable to incorporate the emergency subsidy into the various enterprise budgets. Any effects of the emergency feed assistance program are not reflected in net returns in this report.

This is the first publication in the *Economic Indicators of the Farm Sector* series where livestock and milk costs and returns have been separated from crops data. The report is unique because all estimates are comparable across the Nation, and among production categories, livestock types, and years. The same methodology is used for all commodities and primary data collection in a given year.

The data neither represent a specific producer nor are they economically engineered to be "typical" of livestock operations. The data reflect the average costs and returns of milk and livestock production for producers. An individual farm may have different production costs and returns due to the mix of inputs and yield peculiar to a given livestock farm.

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Costs of production for most livestock enterprises increased significantly in 1988. Milk production costs climbed 12 percent per hundredweight (cwt) in 1988. The major increase came from high feed costs due to the widespread drought of 1988. However, the drought and lower returns caused the price of feeder pigs to drop.

Livestock producers paid higher prices for accumulated inputs in 1988, especially for feed costs which rose 24 percent. The increase followed declines of 7 percent and

5 percent in 1986 and 1987. The 34-percent rise in hay prices significantly raised costs of production for cattle, sheep, and dairy. The index of prices paid for feeder livestock increased modestly as prices for feeder pigs decreased, but prices for feeder cattle increased. After an increase of 1 percent between 1986 and 1987, the Index of Prices Paid for Production Items, Interest, Taxes, and Wage Rates (*Agricultural Prices, 1988 Summary*) climbed 7 percent. Indexes for certain production items changed as follows:

<u>Input</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
	<u>Percent</u>		
Farm origin:			
Feed	-6.9	-4.6	24.3
Hay	-11.7	9.0	33.8
Feeder livestock	-6	17.0	6.7
Nonfarm origin:			
Wage rates	3.9	4.4	3.0
Building	0.7	.7	
Autos and trucks	2.6	5.1	3.4
Tractors	-2.2	0	4.0
Other machinery	-.5	1.6	6.5
Farm supplies	-1.4	0	2.8
Fuels and energy	-19.4	-.6	1.2
Farm chemicals	-.8	-2.4	1.6

**Milk**--The good news: the value of production in all regions, save the Upper Midwest, covered cash expenses and capital replacement charges. The drought's effect on costs and returns, however, contributed to the lowest net returns to dairying, 34 cents per cwt of milk, since the mid-1970's. Drought-induced feed price increases and lower milk prices led to the narrowest margin between total economic costs and gross value of production in recent years. The support price was lowered 50 cents per cwt on January 1, 1988. Although feed prices rose quickly in 1988 due to the drought, the effect on milk prices was not seen until 1989. The Disaster Relief Act of 1988 gave a 50-cent per cwt increase in the support price for 3 months, effective April 1, 1989. Thus, producers felt the effects of increased feed prices with no price relief in 1988.

Feed costs accounted for 45 percent of total costs, up from 41 percent in 1987. The dry conditions reduced yields of corn silage 34 percent and hay production by 22 million tons. Production of feed grains (corn, sorghum, oats, and barley) was down 31 percent from 1987. These conditions drove the U.S. average all-hay price up \$22 per ton, and the U.S. average price for grains and concentrates fed to dairy cattle up 14 percent. Reduced yield increased the costs per ton of homegrown forages and drove some producers to purchase expensive forage in 1988. Thus, the feed expenses per cwt of milk rose \$1.07 (22 percent). Costs per cwt rose \$1.37 (12 percent), with over 75 percent of the increase coming from elevated feed costs.

The significant rise in feed costs was compounded by modest price increases in other costs. Because the milk price fell in 1988, earnings tightened considerably. Net cash returns (gross value of production less cash expenses and capital replacement) dropped 61 percent from the high level of net cash returns in 1987. An average producer milking 108 cows had roughly \$21,000 less to cover family living expenses, pay principal on debts, and allot for discretionary expenses. After all cash costs and opportunity costs for invested capital were accounted for,

a 108-cow producer earned an estimated \$5,000 in return for risk and management of the dairy enterprise in 1988.

Every region felt the effects of the feed prices upturn. The Upper Midwest was hardest hit as total feed expenses per cwt of milk rose \$1.56 (34 percent), mostly due to decreased forage yields and steep increases in purchased forage prices. The Upper Midwest, however, showed smaller increases in grain and concentrate costs, perhaps because of sufficient carryover stocks of grain on hand from 1987. The Northeast and Pacific regions paid smaller increases in total feed costs, around 70 cents per cwt of milk, probably because they normally rely on purchased grains and concentrates. In addition, agriculture in the western drought area had adequate water for the 1988 growing season because irrigation water came from major rivers or reservoirs that collected snowpack runoff.

The Southeast, which relies more heavily on concentrate feeding than the other regions, saw a considerable rise in concentrate expenses, 99 cents per cwt of milk, because most of the grains and concentrates fed in the Southeast are typically imported from areas that were affected by the drought. The Southeast showed the smallest increase in forage costs because the region relies mainly on pasture and local forages which received adequate moisture.

The Pacific region had the lowest fixed cash expenses and capital replacement. Feed costs in the Pacific made up the largest portion of total costs of any region. The Pacific had the lowest total cash expenses and capital replacement of all regions. Most regions had seen a decline in total costs in 1987 which magnified increases in 1988.

Increases in prices for cull cows and calves only slightly offset the drops in milk price that every region faced. The milk price dropped most in the Southern Plains, 50 cents per cwt, with no accompanying increase in the value per cwt of milk for cull cows, calves, and replacements. The Pacific had the next largest decline in value of production, 38 cents per cwt of milk sold. The Southeast and Upper Midwest fared the best, with the 1988 value of milk and cull cows, calves, and replacements only 13 cents per cwt of milk below 1987.

Residual returns to management and risk were negative in some regions for the first time in recent years. The Upper Midwest showed the largest loss for the operator's risk and management of the dairy enterprise. The Corn Belt, the other region with negative returns fared about as well. Net returns dropped most in the Upper Midwest due to the large increase in total economic costs. The Upper Midwest felt the effects of the drought most severely because crop yields were reduced the most in this region where producers rely heavily on growing their own feed.

The Southeast region showed the highest residual return to management and risk per cwt followed by the



Appalachian region. The Southeast maintained a high level of net returns by receiving the highest milk price among the regions, \$2.63 per cwt above the U.S. average. The Pacific region, not hit as hard as other regions by the drought, showed the smallest increase, 76 cents per cwt in total costs. Despite having the lowest milk price, the Pacific had the third highest residual returns to management and risk in 1988. The Upper Midwest received the lowest returns.

**Fed Cattle**--Fed cattle production costs increased more than \$8 per cwt. However, net returns to fed cattle operators deteriorated. The drought boosted prices of feed and feeder calves significantly, which contributed to the drop in net returns to fed cattle operators. Feed and feeder costs accounted for 94 percent of total variable cash expenses. Feed costs increased 39 percent and feeder cattle prices rose 6 percent. The record gross value of fed beef, however, was not high enough to cover total cash expenses. Gross value of production less cash expenses and capital replacement declined \$6 per cwt.

Drought had a more severe impact on farmer feedlots than on commercial feedlots because of the use of different types of feed. Farmer feedlots use large volumes of silage and haylage during the fattening periods, unlike commercial feedlots. The 1988 drought sharply reduced yields of corn silage and hay, forcing farmer feedlot operators to substitute purchased feed for homegrown silage and hay. Total feed costs increased about \$7 per cwt (50 percent) mainly due to higher prices of silage and hay. Total economic costs increased from \$74.67 per cwt to \$86.55 per cwt. Residual returns to management and risk declined about \$7 per cwt.

Commercial feedlots (capacity greater than 1,000 head) also felt the impact of the 1988 drought. Higher feed and feeder calf prices reduced the residual returns to management and risk by more than half. The gross value of fed beef was not high enough to cover total cash expenses. The difference between the gross value of production and cash expenses plus capital replacement for commercial feedlots declined by just under \$6 per cwt.

**Cow-Calf**--Returns to cow-calf production continued to improve. Higher prices for steer and heifer calves and steer and heifer feeders pushed the gross value of production to its highest level, \$350.90 per cow, in the 1980's. For the third consecutive year, the difference between the gross value of production and total cash expenses was positive, following 5 years of negative returns.

The drought increased feed costs, on average, by more than 25 percent nationally and up to 50 percent in the North-Central region for all sizes of cow-calf operations. Feed costs accounted for 65 percent of total variable cash expenses in cow-calf production. Forage costs accounted for over 75 percent of the feed costs. Drought reduced the yield of hay crops, reduced the productivity of

pastures, and had a larger impact on forage than on grain production. Therefore, cow-calf production in the grass-dependent regions, such as the North-Central and South, suffered more than those in the grain-dependent regions. Higher feed costs partially offset higher gross receipts.

Economies of size and lower feed cost per cow made large operations less vulnerable to drought. Medium and large operations covered both cash expenses and capital replacement compared with small operations that covered only cash expenses. Returns to cow-calf production varied extensively depending on size of operation and region. The difference between gross value of production and cash expenses plus capital replacement ranged from \$29.20 per head for operations with more than 500 head to minus \$28.92 per head for operations with fewer than 100 cows. Operations with 100-499 head had returns of over \$15 per cow. Net cash returns for operations with more than 500 head were positive compared with operations with fewer than 100 head per year. Large operations have lower feed expenses and capital replacement and higher labor costs relative to medium and small producers.

Feed, labor, and capital replacement expenses and type of output (calves versus feeders) and size of operation in cow-calf production influence the relative returns across regions. The South's smaller than average operations carried a difference between value of production and cash expenses plus capital replacement (net cash returns) that was less favorable than other regions. The net cash returns in the South and North-Central were minus \$73.59 and minus \$37.13 per cow, respectively, and in the West and Great Plains, \$18.43 and \$15.92 per cow, respectively.

Cow-calf production is more dependent on forage than grains. The cow-calf producers in the South sold more calves than feeders and earned smaller value on production because of less forage in the spring. In addition, cow-calf operations are more labor intensive in the South and West than in the Great Plains. Capital replacement charges were significantly lower in the West and Great Plains compared with the South and North-Central.

**Hogs**--After relatively high net returns in 1987, hog producers saw net returns turn negative in 1988. Higher feed costs and lower hog prices drove down the value of production less cash expenses and capital replacement. Feeder pig producers paid the highest feed costs, followed by farrow-to-finish operations. Feeder pig finishers fared best by breaking even. Economies of size heavily influence hog costs of production, especially for feeder pig producers and farrow-to-finish producers. Large pork producers seem to be more cost efficient, taking advantage of volume discounts on feed purchases and mixing feed themselves, which contributes to lower feed costs. In addition, large operations can take advantage of specialized labor, reducing labor costs. Size differentials were accentuated as a result of the drought and higher feed costs.



**Farrow-to-Finish--**Slaughter hog prices declined \$11 per cwt. This decline, coupled with the drought-induced higher feed costs, triggered a \$17.55 per cwt decline in net returns for farrow-to-finish operators. Value of production less cash expenses and capital replacement dropped to minus \$2.25 per cwt from \$15.30.

Profitability for farrow-to-finish operations in the Southeast declined more than operations in the North-Central region, reflecting lower grain prices in the North-Central region. Only the smallest producers (140 head) and producers in the Southeast barely failed to recover all cash expenses, missing by just 8 cents per cwt. The largest producers (3,000 head and more) were the only group to recover both cash expenses and capital replacement costs.

**Feeder Pig Production--**Feeder pig producers earned relatively high net returns in 1987, only to see net returns turn negative in 1988. Value of production less cash expenses and capital replacement dropped from \$16.98 per cwt for all feeder pig producers, to minus \$16.52 per cwt. Most variable cash expenses revolve around feed expenses. So, the drought of 1988 hurt feeder pig production more than hog production. Declining feeder pig prices reduced gross value of production by almost 30 percent, and feed prices increased about 15 percent during the same period, causing the precipitous decline in profitability in the industry. All sizes of operations failed to cover total cash expenses, but the larger operations (650 head or more) at least recovered variable expenses in that year. Net returns in the North-Central region improved relative to the Southeast in 1988. Value of production less cash expenses and capital replacement was higher in the North-Central region than the Southeast in 1987 and 1988.

**Feeder Pig Finishing--**The 30-percent decline in feeder pig prices helped temper the effects of the drought on net returns. Value of production less cash expenses and capital replacement (net cash returns), however, dropped more than \$9 per cwt for all sizes of operations. Declining net cash returns were the result of an \$11-per-cwt drop in slaughter hog prices and a 30-percent increase in feed costs. The net returns for the 10,000-head feeder pig finisher was minus 86 cents per cwt and was minus \$5.66 for the 140-head operation. The North-Central region maintained its competitive advantage in feeder pig finishing with net cash returns of minus \$1.69 per cwt compared with net returns in the Southeast of minus \$7.

**Sheep--**Value of production from sheep production declined sharply. Lamb prices declined while wool prices increased. The higher wool prices, however, were not large enough to offset lower prices of lamb and mutton. Gross value of production declined by more than \$7 per ewe.

The 1988 drought pushed feed costs to \$14.26 per ewe. Sheep producers, faced with higher feed costs and lower lamb prices, earned lower net returns. The value of production less cash expenses and capital replacement

declined from \$25.32 per ewe to \$16.75 per ewe. The residual returns to management and risk declined to \$2.71 per ewe, a drop of just under \$11 per ewe from 1987.

## Time Series Data

The procedures, methodology, and format used by USDA to report crop, livestock, and milk production costs have changed significantly since 1974 when ERS was given this responsibility. This report presents a consistent set of costs and returns estimates for U.S. livestock and dairy production for 1972-88. Tables 56-62 show the cost of producing livestock and milk for 1972-85. The report's one set of time series data tracks changes in the cost structure of the livestock and dairy industry over time. Total economic costs for cattle, hogs, sheep, and milk production ranged from 52 percent to 149 percent higher in 1988 than 1972.

**Milk--**Total economic costs of producing milk averaged \$10.71 per cwt from 1972 through 1988. Total value of production peaked in 1981, averaging \$12.14 per cwt of milk during 1972-88. Returns were highest in 1979. Residual returns averaged \$1.43 per cwt over the 17-year period. Feed made up an average of 41 percent of total economic costs, ranging from 38 percent in 1972 and 1981-84 to 45 percent in 1974-76 and in 1988. The residual returns to management and risk as a percent of total economic costs averaged 13 percent during 1972-88. The lowest ratio was in 1988 when residual returns were only 2 percent of total costs. The highest ratio was 22 percent in 1978.

**Fed Cattle--**Total value of fed beef production peaked in 1988, at \$74.32 per cwt, averaging \$55.54 during 1972-88. The residual returns to management and risk at \$4.63 per cwt were highest in 1987. Receipts failed to cover cash expenses plus capital replacement in 16 of 17 years. Residual returns to management and risk were negative for 13 of the years during 1972-88, varying from \$7.97 per cwt in 1974 to \$4.63 per cwt in 1978. Feeder calves made up an average of 59 percent of total economic costs, ranging from 63 percent in 1972 to 67 percent in 1979 to 62 percent in 1988. Feed accounted for 28 percent of total economic costs, averaging \$16.03 per cwt.

The average U.S. beef cow-calf enterprise had higher cash expenses than value of production in 8 of 17 years. Net returns hit a high of \$121.14 per cow in 1979 and a low of minus \$42.76 per cow in 1975. Improving net returns during 1986-88 increased the 17-year average net returns per cow to \$13.39 per cow. However, including capital replacement with total cash expenses reduced the 17-year average net cash returns to minus \$35.80 per cow. Total cash expenses for the average U.S. beef cow enterprise have mostly increased since 1972. In 1977, 1983, and 1985-87, total variable cash expenses fell, mostly due to a decline in feed expenses in those years. Feed costs, which account for 45 percent of all cash



expenses, were highest in 1988 at \$115.52 per cow (83 percent of cash expenses) and lowest in 1972, \$62.98 per cow. Drought and the payment in kind programs (PIK) in 1983 and drought in 1988 increased feed costs by \$8.05 and \$22.45 per cow, respectively, from the previous year's level. The margin between the gross value of cow-calf production and total economic costs was positive in 4 of 17 years.

**Hogs--**Farrow-to-finish costs of producing slaughter hogs in 1988 were 97 percent above the total economic costs in 1972. Total economic costs averaged \$44.28 per cwt of hogs sold during 1972-88, peaking in 1983 at \$54.28 per cwt. Feed costs accounted for an average of 68 percent of total cash expenses. The average farrow-to-finish enterprise failed to cover total economic costs in 8 of 17 years. The gross value of production exceeded cash expenses for 14 of 17 years, and receipts less cash expenses averaged \$6.05 per cwt, ranging from minus \$2.66 in 1974 to \$20.91 per cwt in 1987. Value of production less cash expenses plus capital replacement averaged \$1.11 per cwt.

Feeder pig production enterprises followed much the same patterns as farrow-to-finish enterprises. The gross value of production was related to the demand for feeder pigs from feeder pig finishers. Demand for feeder pigs was strong in 1978, 1982, and 1987. Value of production was highest in 1982 at \$95.23 per cwt, \$23.64 per cwt above the 17-year average. Feed costs accounted for more than 55 percent of total cash expenses during 1972-88. The 17-year average net returns (value of production less cash expenses) for feeder pig production of \$9.34 per cwt fell far below the returns achieved of \$30.76 in 1978 and \$28.74 in 1987. Total economic costs in 1972 were at a 17-year low, \$46.83 per cwt. Economic costs increased steadily through 1981 and declined before peaking at \$105.32 per cwt in 1983.

Costs and returns for feeder pig finishers do not parallel those of farrow-to-finish enterprises. The cost of feed is an important factor, but the cost of feeder pigs is an additional factor in the economic performance and success of pig finishing. Feeder pig expenses accounted for 37 percent of total cash expenses, and feed costs accounted for 39 percent. The net cash returns for feeder pig finishers were positive only in 1987. Total economic costs for the 17-year period peaked in 1979 at \$57.80 per cwt, a year in which both feed and pig prices were relatively high. In contrast, 1972 total economic costs hit a low of \$29.57 per cwt.

**Sheep--**Total economic costs for sheep producers have generally increased since 1972, except for drops in 1977, 1983, 1985, and 1986, mostly due to lower feed expenditures. Total economic costs per ewe in 1988 were 116 percent higher than costs in 1972. Receipts for sheep producers have not been sufficiently large to cover

all economic costs in 10 years of the 17-year period. However, value of production covered total cash expenses plus capital replacement in all years but 1983. The 17-year average of cash expenses was \$34.14 per ewe, while gross value of production averaged \$48.69 per ewe, \$14.55 per ewe above cash expenses. Cash expenses for U.S. sheep production are almost evenly split between feed expenses, other variable expenses, and fixed expenses. Gross value of production declined significantly in 1988 but was 162 percent higher than in 1972. Contributions of the sale of lambs to total value of production declined, but Federal wool incentive and unshorn lamb payments increased, from 7 percent of total value of production in 1977 to 21 percent in 1986.

## Structure of Accounts, Data Sources and Estimation, and Costs-and>Returns Measures

ERS relies on periodic producer surveys to obtain technical data from which the enterprise budgets for specific commodities are constructed.

### Primary Data

Structural data (such as herd size; expenses for selected livestock inputs; types and quantities of feed, housing, equipment for handling feed and manure, and storage structures for feed and manure) are obtained from livestock producers. The technical data used as the basis for the livestock budgets are obtained through the Farm Costs and Returns Surveys (FCRS). The FCRS, begun in 1984, is conducted jointly by ERS and the National Agricultural Statistics Service (NASS) and consists of personal interviews of farm and ranch operators which obtain information on income, expenses, and production practices. The expense of data collection prohibits every type of livestock enterprise from being surveyed every year, thus each enterprise is generally surveyed on a 4-year rotating basis.

Prior to 1984, the primary survey of costs of production was the Costs of Production Survey (COPS), also conducted by USDA. USDA first drew the COPS samples from nonrandom lists of producers who had responded to other acreage and production surveys, based on probability proportional to size. The different sampling schemes between the COPS and the FCRS may have some effect on the data used in the underlying production budgets. For example, the 1985 dairy version of the FCRS was more representative of all producers and was less skewed toward larger farms than was the 1979 survey. As a result, the 1985 average herd size and output per cow was less than reported in 1979, contrary to the industry trend. New FCRS data for costs of production will be incorporated into future COP estimates. The 1986-88 budgets in this report are based on surveys of production practices in the years shown below:



<u>Enterprise</u>	<u>COP data year</u>
Fed cattle	1980
Cow-calf	1980
Hogs	1980
Milk	1985
Sheep	1980

The FCRS is a multiframe stratified survey composed of list and area frames. The list frame is made up of farms known to have previously produced a commodity, stratified by size of enterprise. In the year that a particular livestock enterprise was surveyed for production practices, the entire COP sample for that enterprise was in a list frame from which the sample was randomly drawn. Each questionnaire or observation represents a number of similar farms, the particular number being the survey expansion factor, which is the inverse of the probability of the observation being selected in the sample. The FCRS is conducted during February and March, and the acquired data pertain to production in the previous year.

Between survey years, the budgets are updated by secondary price and quantity data, most often from NASS. The dairy budgets from 1972-84 are based on technical data from the 1979 dairy COPS, while the dairy 1985-88 budgets are based on technical data from the 1985 FCRS. The other livestock enterprise budgets for 1972-80 are based on 1976 COPS technical data, and the budgets for 1981-88 are based on the 1980 COPS.

## Secondary Data

The base technical data are supplemented with price and quantity data available from other surveys conducted by ERS and the National Agricultural Statistics Service (NASS). These additional data include livestock prices, milk prices, milk yield, milk cow and livestock numbers, land values, wage rates, price and quantity data for dairy and livestock feeds, and prices paid for other agricultural inputs. These secondary data are also used to update the costs-and-returns budgets between survey years.

The procedure for calculating the cost of owning and operating machinery and equipment is complex. Every operation has a different age and size distribution and different numbers and types of machinery and equipment items. Most operations have more than one enterprise. Allocation of machinery and equipment costs for an enterprise budget should reflect only the machinery and equipment use of that enterprise. The numbers, sizes, hours of use, type of fuel used, age, total hours of annual use for the enterprise, and types of machinery and equipment used for specific enterprises come from FCRS data. ERS specifies the length of life, list prices, and purchase prices. Prices are updated annually by prices paid indexes for certain farm machinery reported by NASS in *Agricultural Prices*.

Engineering relationships, developed by the American Society of Agricultural Engineers (ASAE), are programed into a computerized budget generator and estimate

machinery costs on a per-hour basis. These equations estimate expenses for fuel, lubrication, electricity, repairs, taxes, insurance, and machinery replacement costs according to the number, type, and hours of use described in the survey data for the equipment and machinery.

## Enterprise Budgets

ERS prepares and presents costs-of-production data in the form of an enterprise budget, which is a summary of all costs and returns associated with the production of livestock or milk. The budgets indicate costs associated only with the specific enterprise and exclude costs and returns generated by all other enterprises on the farm. For example, many operations grow feed for their livestock. The budgets reflect costs associated with producing the feed that is actually used in producing milk and/or meat, excluding both the costs and returns from homegrown feed not used in the respective dairy and livestock enterprises.

The budgets are estimated on a per-head basis and on a per-cwt of milk or meat basis. State enterprise budgets are weighted by the number of head of the livestock type in the State and aggregated into regional and national average costs and returns. Each enterprise budget contains cost and returns measures separated into three major categories: gross value of production, cash expenses, and economic costs.

## Gross Value of Production

Including the value of production puts costs in perspective. A given level of costs could be associated with a high or low level of net returns, depending on the value of the livestock product(s). Reporting only costs or just the value of production gives just half the picture. The value of production within the calendar year is included whether or not cash payment was actually received in the same calendar year the livestock product was produced. For example, the cash payment for milk produced in December is often received in January of the following year. The term once used, "cash receipts," was dropped in favor of the more accurate term, value of production. The value of both the primary and the secondary or joint livestock products, that is, cull and surplus stock and/or wool, are included. Although these products are easily identified, their production costs are not easily distinguished. Especially difficult is determining whether certain inputs, such as feed or housing, are for the production of the primary or secondary product. So, a budget for the complete livestock enterprise is estimated rather than singling out the production costs of a product.

Except for wool incentive and unshorn lamb payments, direct Government payments are excluded from the value of production. The effects of Government programs on milk and meat prices, however, are reflected in the market prices. The Government supports the milk price through direct market intervention by Commodity Credit



Corporation (CCC) purchases of manufactured dairy products. The Government also intervenes in the markets for milk and meat by limiting the quantity of milk and meat imports. Thus, the effects of some Government programs are implicitly included in the value of production.

The Federal Government assists agricultural producers in emergencies caused by natural disasters. For example, one provision of the emergency feed assistance program (EFAP) provides direct payments for producers facing abnormally high feed expenses. However, because of the lack of data linking these payments to specific enterprises, we do not include the payments in the value of production.

The value of production is based on product prices and yields. Gains and losses accruing from changes in asset values are not included. Livestock prices are the prices received in the month that the livestock is sold (or purchased) for the particular type (cows, steers and heifers, calves, barrows and gilts, sows, lambs, sheep, or wool) reported by NASS in *Agricultural Prices*. The byproducts from milk production, cull dairy cows, calves, and replacements, reflect the marketing year average price. The milk price is the average annual price received for milk sold to plants and dealers by producers as reported by NASS in *Agricultural Prices*. The FCRS shows the quantity (and month sold/purchased for beef, hog, and sheep enterprises) of livestock sold in the year production practices are obtained for the particular enterprise and remains constant over survey years. FCRS data also furnish milk sold per cow. However, the quantity of milk sold is updated between survey years by indexing the changes in average milk production per cow reported by NASS in *Milk Production*.

## Cash Expenses

Cash expenses per unit of livestock product reflect the minimum break-even prices needed to produce in the short run. Subtracting cash costs from the gross value of production leaves net cash available before replacement of depreciable assets. This measure of returns excludes income taxes and principal payments. (Income taxes and principal payments are not specified in the enterprise budgets.) Returns are also calculated after subtracting a charge for the replacement of machinery, equipment, livestock, and buildings. Although producers have some discretion as to when to make capital purchases, over the long run, producers must set aside funds to replace equipment, machinery, livestock, and buildings. The gross value less cash expenses and capital replacement charges reflects the cash available for family living expenses, debt retirement, and other discretionary uses.

## Variable Cash Expenses

Variable cash expenses are those incurred only when production takes place. For most livestock enterprises, the largest single component of variable expenses is feed. The FCRS furnishes the amounts and types of feed used

and how much was grown by the producer for the livestock enterprise. The quantity includes feed fed to both breeding and replacement stock. The feeds are itemized and listed at the head of the variable cash expenses under the subheading "Feed." The full cost of purchased forage and the variable costs of forage production is reported in these line items. The other nonvariable costs (such as taxes and insurance, capital replacement charges, and returns to operating capital, nonland capital, and land) for the crop machinery and cropland associated with homegrown livestock forage production are included in specific line items. The homegrown forage costs are estimated annually from separate forage production budgets. The prices of purchased forages were reported in the FCRS and are updated between survey years by indexing according to changes in hay prices reported by NASS in *Agricultural Prices*.

The concentrates expense includes all purchased and homegrown grains, nutritional supplements, and premixed feeds in the dairy enterprise budgets. Contrary to the treatment of forage costs, all concentrates are valued at market price, as reported by producers for purchased concentrates in the FCRS. The price and quantity of concentrates fed is updated between surveys by indexing according to the change in the quantity fed per cwt of milk and the value of grains and concentrates fed to milk cows, respectively, as reported by NASS in *Milk Production*. The level of feeding also is adjusted by year-to-year changes in output per cow between surveys.

In the other livestock enterprise budgets, the market price for grains, concentrates, and supplements is used. These market prices are adjusted between survey years by indexing according to changes in prices paid for the respective commodity as reported by NASS in *Agricultural Prices*. The quantities of grains and supplements are obtained from the FCRS and are not adjusted between survey years.

Some producers may have been eligible for the Federal Government's drought relief programs. EFAP provided for low-cost grains. However, due to the uneven geographic distribution of program benefits, data were inadequate to reflect the impact of the EFAP assistance on the various enterprise budgets.

The expenses for several other inputs are obtained from FCRS data and are updated between survey years by changes in the following NASS price data. Artificial insemination expenses and Dairy Herd Improvement Association (DHIA) fees reflect 20 percent of the change in the prices paid index for fuels and energy, 30 percent of the change in the prices paid index for autos and trucks, and 50 percent of the change in the wage rate index. Veterinary and medicine expenses reflect 30 percent of the change in the prices paid index for agricultural chemicals and 70 percent of the change in the wage rate index.



Livestock hauling expenses reflect 30 percent of the change in the prices paid index for fuels and energy and 70 percent of the change in the prices paid index for farm and motor supplies. Dairy supplies are based on changes in the prices paid index for items used for production. Hired labor is estimated by multiplying the number of hours obtained from the FCRS times the reported farm labor wage rate plus the employer's share of social security. Hired labor expense for the dairy enterprise was obtained as a total expense per cow and is indexed between survey years by the change in the farm labor wage rate including Social Security. The fees that brokers, cooperatives, handlers, or dealers charge to enable the exchange of livestock products are marketing expenses.

Milk marketing charges per cwt are obtained from the FCRS and are updated by changes in the marketing charges reported by administrators of Federal Milk Marketing Orders. Milk hauling charges are estimated in the same way. Livestock marketing charges are obtained from the FCRS and are updated from the prices paid index for all production items of nonfarm origin. The expense for bedding materials, such as straw, is obtained from the FCRS. Bedding expenses are updated by the price of straw as reported by NASS in *Agricultural Prices*.

Credit for the fertilizer value in manure from fed cattle operations and hog operations is included as an expense because it reduces the cost of fertilizer used in producing feed for these enterprises. The value is estimated by taking the amount of nitrogen, phosphorus, and potassium supplied by the manure from the enterprise and multiplying it by the price of the respective ingredients for the survey year. Between survey years, the value of livestock manure is indexed by the prices paid for fertilizer. The custom feed mixing expense for cow-calf and feeder pig enterprises are taken from the FCRS and are updated by labor and machinery cost indexes.

Shearing and tagging expenses for sheep enterprises are taken from the FCRS and are updated by changes in the wage rate. Ram death loss accounts for the number of rams that need to be replaced to maintain the flock. The quantity is obtained from the FCRS and is valued at the market price for sheep as reported by NASS in *Agricultural Prices*.

The fuel, lube, and electricity expenses for the equipment and machinery specified in the FCRS are calculated by the economic engineering equations developed by the ASAE. Prices for fuels in each State, adjusted for refundable Federal and State excise taxes where necessary, are those reported by NASS in *Agricultural Prices*.

Machinery and building repairs for equipment, machinery, and buildings specified in the FCRS for each enterprise

are also estimated by economic engineering equations developed by the ASAE.

### Fixed Cash Expenses

General farm overhead, taxes and insurance, and cash interest paid are items that are relatively fixed in the short run, regardless of the level of production. Overhead expenses represent actual cash expenses for electricity for general farm use, fees and dues, fence materials and supplies, farm telephones, farm water (not irrigation), water drainage, liability insurance, and general business. Actual interest expenses paid reflects both real estate and nonland loans. These expense items come from the expenditure portion of the FCRS.

Personal property taxes are based on the current value of new machinery, equipment, and buildings lagged to a base year. Land taxes are based on the value of land and the real estate taxes for the particular production area. Lags are based on the average age of equipment, machinery, and buildings from the FCRS data. Insurance expense, however, is based on the current value of these assets. Only taxes on the machinery, equipment, and buildings actually used in the production of the particular enterprise are included.

### Capital Replacement

In any year, an operator may defer machinery and equipment purchases depending on the economic conditions facing the operation. To maintain production over the long run, however, timely replacement of capital stock is essential. ERS estimates the costs of machinery, equipment, and breeding livestock at current prices. Thus, capital replacement represents a charge sufficient to maintain production capacity through time. The value of purchased breeding animals depreciates to salvage value. The number of years over which the animal's value depreciates varies by region and species. Livestock used for replacement but raised on the farm do not depreciate because the cost of raising these replacements is included in the budgets. Depreciating raised replacements would be double-counting.

### Economic (Full Ownership) Costs

This section allows comparison of livestock production costs and returns across varying levels of equity. All assets are assumed to be owned. The cash expense section includes actual cash interest paid, which is heavily dependent on the level of debt, the type of debt, and what the terms are with lending institutions. Therefore, instead of including the actual cash interest expense, the opportunity costs of operating capital, nonland capital, and landownership are imputed. The value of unpaid labor is also imputed. These costs cannot be determined during the production period through market transactions because there are none. The economic cost per unit indicates the average break-even price needed to motivate producers to continue producing in the long run.



The return allocated to operating capital is based on the assumption that the rational producer expects money invested in variable production inputs to earn at least as much as if the money were placed in a savings account or a similar financial instrument. Thus, the 6-month U.S. Treasury bill rate is used. The rates for 1986, 1987, and 1988 were 5.40, 5.86, and 6.9 percent.

The annual expected return the average producer might receive from capital invested in the nonland assets used in livestock production is estimated by multiplying a 10-year moving average of the ratio of residual income to assets for the farming sector by the value of the machinery, equipment, and breeding livestock. The value of machinery, buildings, and equipment are lagged from current prices according to their average age to reflect their initial prices. The average age for equipment and permanent structures is obtained from the FCRS.

Livestock, however, is valued at the current year's prices. An operator could expect the capital invested in these inputs to receive an annual return equal to their opportunity costs, exclusive of asset valuation changes because of inflation or deflation. The rate of return must be calculated from earnings from the current production process. Earnings from price appreciation (capital gains) or price depreciation are not included here or in the value of production section. The expected rate of return is calculated by taking the average of the previous 10-year total return to production assets in the agricultural sector, subtracting the value of the operator's labor used each year, and dividing by the respective value of production assets. All three series appear in *Economic Indicators of the Farm Sector: National Financial Summary*. The

calculated rates for 1986 through 1988 are 2.22, 2.55, and 2.81 percent.

The allocated returns to land is the value of land used for the livestock enterprise (including land for livestock feed production) multiplied by the calculated 10-year rate of return to agricultural assets.

The annual quantity of unpaid labor (operator, family, and other) was reported in the FCRS and is valued at the annual average hourly wage rate for "all hired farmworkers" plus the employer's share of social security taxes. Any additional return reflecting the operator's entrepreneurial skill (or fortune) appears in the residual return to management and risk.

Thus, total economic costs consist of variable cash expenses, general farm overhead, taxes and insurance, capital replacement, and allocated returns to operating capital, nonland capital, land, and unpaid labor. The residual, once total economic costs are subtracted from the gross value of production, is the return to the producer's management and risk. The returns to management and risk should be evaluated in light of the given allocation of returns to owned inputs and are directly comparable across livestock enterprises since the same procedures are used. In the long run, the return to risk is expected to average near zero, although in any year, the residual return to risk could be positive or negative depending on weather and supply and demand factors. Returns to management is not typically determined by a set rate, so the actual level is quite obscure, but it should be greater than zero. Therefore, the average residual returns to both management and risk should be positive.

Figure 1

## Fed Cattle Production Region

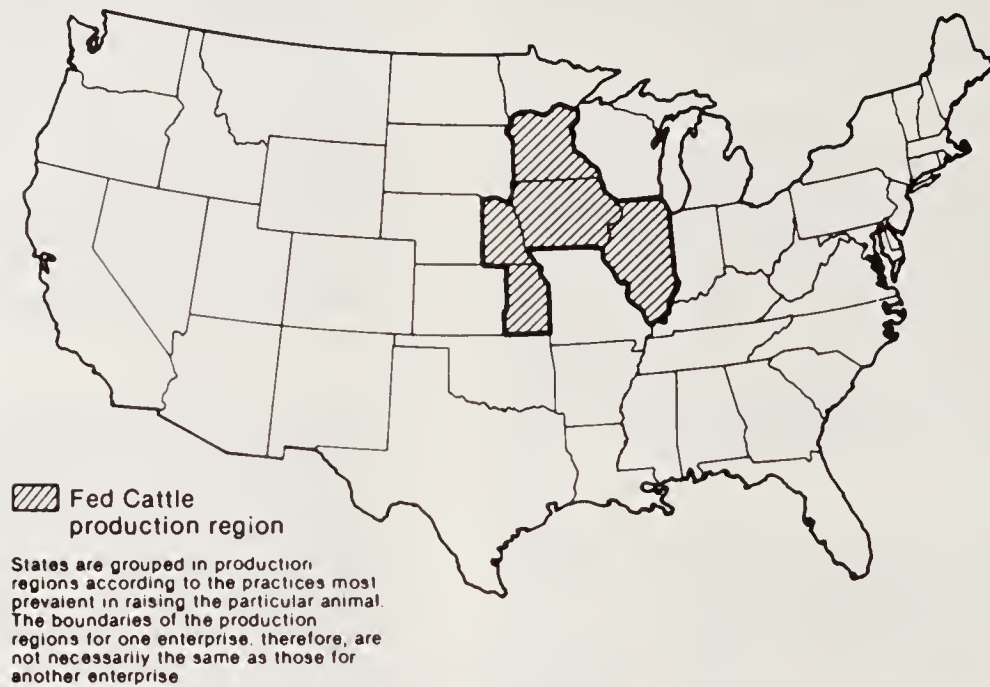


Figure 2

## Cow-Calf Production Regions

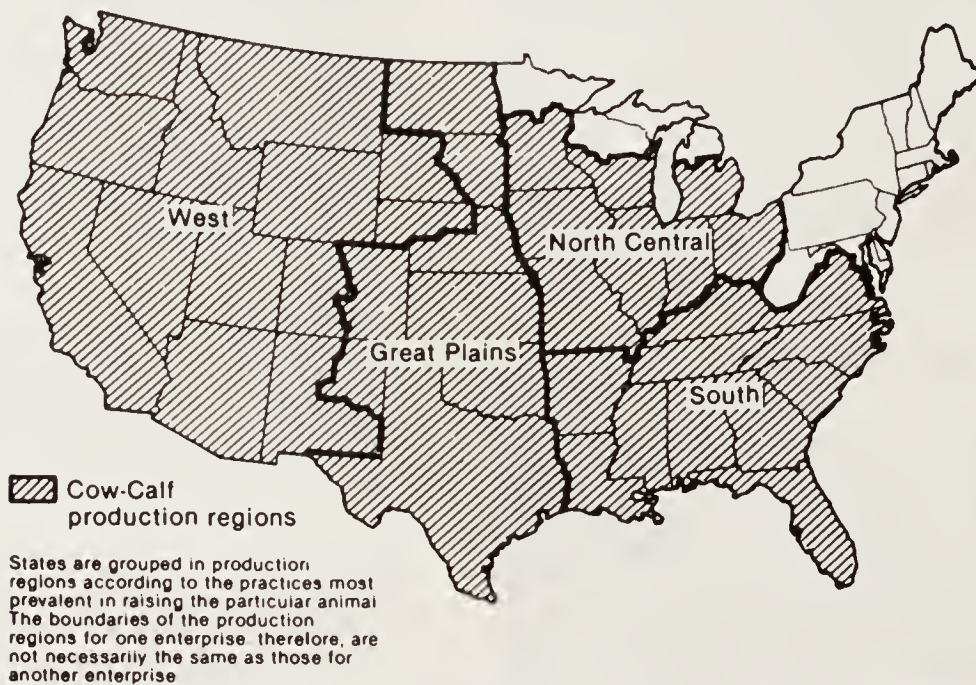


Figure 3

## Hog Production Regions

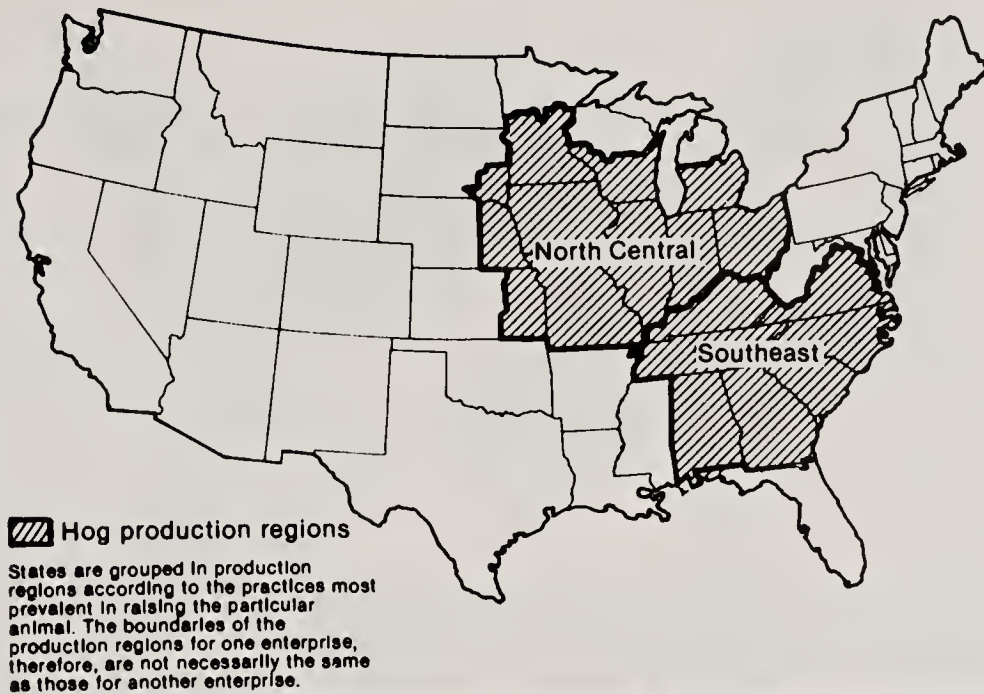


Figure 4

## Sheep Production Region

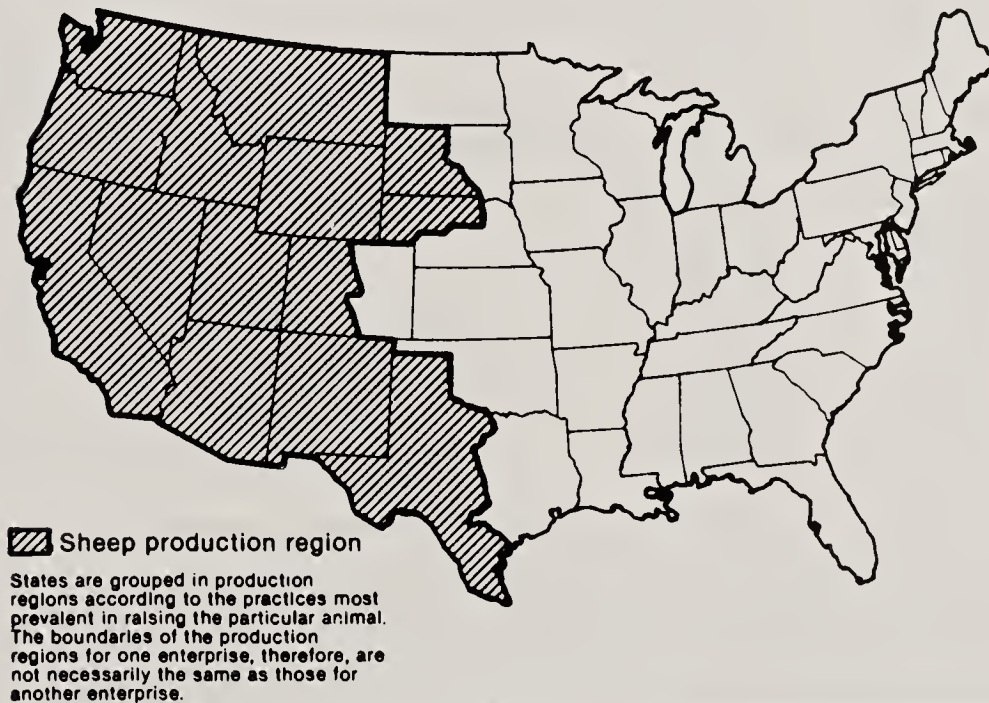




Figure 5

## Dairy Production Regions



States are grouped in production regions according to the practices most prevalent in raising the particular animal. The boundaries of the production regions for one enterprise, therefore, are not necessarily the same as those for another enterprise.



Table 1--U.S. milk production costs, all sizes of operation, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (144.73 cwt) 1/	1,681.82	1,755.29	1,764.76
Cull cows	136.39	164.13	177.47
Total	1,818.21	1,919.42	1,942.23
Cash expenses:			
Feed--			
Concentrates (6,768.9 lbs)	426.50	426.45	488.74
By-products (548.4 lbs)	28.24	26.93	33.04
Hay (6,348 lbs)	143.68	144.18	199.28
Silage (11,356 lbs)	76.26	73.11	117.15
Pasture and other forage	8.28	7.98	10.04
Other--			
Milk hauling and marketing	73.85	84.94	87.67
Artificial insemination	16.28	16.85	17.26
Veterinary and medicine	27.67	28.23	28.86
Livestock hauling	3.64	3.61	3.67
Fuel, lube, and electricity	29.32	31.59	31.44
Machinery and building repairs	52.18	52.57	53.38
Hired labor	128.61	134.82	141.85
DHIA fees	8.08	8.34	8.56
Dairy supplies	26.04	26.54	28.31
Dairy assessment	48.60	26.72	4.34
Total, variable cash expenses	1,097.23	1,092.86	1,253.59
General farm overhead	78.78	97.18	115.77
Taxes and insurance	46.38	47.76	54.91
Interest	163.15	141.56	145.43
Total, fixed cash expenses	288.31	286.50	316.11
Total, cash expenses	1,385.54	1,379.36	1,569.70
Value of production less cash expenses	432.67	540.06	372.53
Capital replacement	216.22	217.85	238.08
Value of production less cash expenses and capital replacement	216.45	322.21	134.45
Economic (full ownership) costs:			
Variable cash expenses	1,097.23	1,092.86	1,253.59
General farm overhead	78.78	97.18	115.77
Taxes and insurance	46.38	47.76	54.91
Capital replacement	216.22	217.85	238.08
Allocated returns to owned inputs:			
Return to operating capital 2/	7.41	8.01	10.84
Return to other nonland capital 3/	72.36	86.60	102.53
Land 4/	18.60	19.16	26.65
Unpaid labor (15.20 hrs)	72.18	74.10	78.66
Total, economic costs	1,609.16	1,643.52	1,881.03
Residual returns to management and risk	209.05	275.90	61.20

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 2--U.S. milk production costs, all sizes of operation, per cwt, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (1 cwt)	12.47	12.51	12.24
Cull cows	1.02	1.18	1.24
Total	13.49	13.69	13.48
Cash expenses:			
Feed--			
Concentrates (47.7 lbs)	3.19	3.06	3.42
By-products (3.6 lbs)	.20	.18	.22
Hay (44 lbs)	1.04	.99	1.35
Silage (80 lbs)	.57	.53	.83
Pasture and other forage	.06	.06	.07
Other--			
Milk hauling and marketing	.55	.61	.61
Artificial insemination	.12	.12	.12
Veterinary and medicine	.20	.20	.20
Livestock hauling	.03	.03	.03
Fuel, lube, and electricity	.22	.23	.22
Machinery and building repairs	.39	.38	.37
Hired labor	.94	.94	.97
DHIA fees	.06	.06	.06
Dairy supplies	.19	.19	.20
Dairy assessment	.36	.19	.03
Total, variable cash expenses	8.12	7.77	8.70
General farm overhead	.59	.70	.81
Taxes and insurance	.35	.35	.39
Interest	1.23	1.03	1.02
Total, fixed cash expenses	2.17	2.08	2.22
Total, cash expenses	10.29	9.85	10.92
Value of production less cash expenses	3.20	3.84	2.56
Capital replacement	1.64	1.59	1.69
Value of production less cash expenses and capital replacement	1.56	2.25	.87
Economic (full ownership) costs:			
Variable cash expenses	8.12	7.77	8.70
General farm overhead	.59	.70	.81
Taxes and insurance	.35	.35	.39
Capital replacement	1.64	1.59	1.69
Allocated returns to owned inputs:			
Return to operating capital 1/	.05	.06	.08
Return to other nonland capital 2/	.55	.63	.72
Land 3/	.14	.14	.19
Unpaid labor (.11 hr)	.55	.54	.56
Total, economic costs	11.99	11.78	13.14
Residual returns to management and risk	1.50	1.91	.34

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 3--Appalachian milk production costs, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (128.83 cwt) 1/	1,635.64	1,714.64	1,707.32
Cull cows	80.48	97.22	105.35
Total	1,716.12	1,811.86	1,812.67
Cash expenses:			
Feed--			
Concentrates (6,610.8 lbs)	443.73	445.59	518.50
By-products (358.4 lbs)	21.87	24.33	24.43
Hay (4,856 lbs)	90.92	84.63	99.39
Silage (12,448 lbs)	100.08	92.41	109.03
Pasture and other forage	9.38	9.42	10.32
Other--			
Milk hauling and marketing	73.73	75.47	80.35
Artificial insemination	9.80	10.04	10.29
Veterinary and medicine	19.22	19.47	19.95
Livestock hauling	2.71	2.68	2.73
Fuel, lube, and electricity	21.40	23.62	23.29
Machinery and building repairs	35.08	35.28	35.82
Hired labor	132.07	137.81	143.80
DHIA fees	5.70	5.83	5.98
Dairy supplies	24.40	24.79	26.48
Dairy assessment	44.95	24.12	3.87
Total, variable cash expenses	1,035.04	1,015.49	1,114.23
General farm overhead	62.78	87.61	101.72
Taxes and insurance	45.80	44.52	46.71
Interest	120.30	139.87	94.88
Total, fixed cash expenses	228.88	272.00	243.31
Total, cash expenses	1,263.92	1,287.49	1,357.54
Value of production less cash expenses	452.20	524.37	455.13
Capital replacement	182.69	181.03	188.86
Value of production less cash expenses and capital replacement	269.51	343.34	266.27
Economic (full ownership) costs:			
Variable cash expenses	1,035.04	1,015.49	1,114.23
General farm overhead	62.78	87.61	101.72
Taxes and insurance	45.80	44.52	46.71
Capital replacement	182.69	181.03	188.86
Allocated returns to owned inputs:			
Return to operating capital 2/	6.99	7.44	9.64
Return to other nonland capital 3/	65.19	77.12	89.06
Land 4/	41.25	38.91	44.82
Unpaid labor (7.28 hrs)	31.40	32.55	35.04
Total, economic costs	1,471.14	1,484.67	1,630.08
Residual returns to management and risk	244.98	327.19	182.59

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 4--Appalachian milk production costs, per cwt, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (1 cwt)	13.07	13.47	13.21
Cull cows	.65	.77	.82
Total	13.72	14.24	14.03
Cash expenses:			
Feed--			
Concentrates (52.5 lbs)	3.60	3.55	4.08
By-products (2.6 lbs)	.17	.18	.18
Hay (38 lbs)	.75	.69	.80
Silage (94 lbs)	.78	.71	.83
Pasture and other forage	.08	.08	.08
Other--			
Milk hauling and marketing	.59	.59	.62
Artificial insemination	.08	.08	.08
Veterinary and medicine	.15	.15	.15
Livestock hauling	.02	.02	.02
Fuel, lube, and electricity	.17	.19	.18
Machinery and building repairs	.29	.28	.28
Hired labor	1.01	1.04	1.07
DHIA fees	.04	.04	.04
Dairy supplies	.19	.19	.20
Dairy assessment	.36	.19	.03
Total, variable cash expenses	8.28	7.98	8.64
General farm overhead	.50	.69	.79
Taxes and insurance	.37	.36	.37
Interest	.96	1.10	.73
Total, fixed cash expenses	1.83	2.15	1.89
Total, cash expenses	10.11	10.13	10.53
Value of production less cash expenses	3.61	4.11	3.50
Capital replacement	1.49	1.45	1.49
Value of production less cash expenses and capital replacement	2.12	2.66	2.01
Economic (full ownership) costs:			
Variable cash expenses	8.28	7.98	8.64
General farm overhead	.50	.69	.79
Taxes and insurance	.37	.36	.37
Capital replacement	1.49	1.45	1.49
Allocated returns to owned inputs:			
Return to operating capital 1/	.06	.06	.07
Return to other nonland capital 2/	.53	.62	.70
Land 3/	.34	.31	.36
Unpaid labor (.06 hr)	.26	.27	.28
Total, economic costs	11.83	11.74	12.70
Residual returns to management and risk	1.89	2.50	1.33

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 5--Corn Belt milk production costs, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (133.59 cwt) 1/	1,546.12	1,622.19	1,618.02
Cull cows	161.34	186.19	200.00
Total	1,707.46	1,808.38	1,818.02
Cash expenses:			
Feed--			
Concentrates (7,738.3 lbs)	489.28	478.18	539.01
By-products (332.3 lbs)	20.77	19.84	22.75
Hay (5,680 lbs)	78.19	76.09	119.09
Silage (9,892 lbs)	45.72	43.22	77.92
Pasture and other forage	9.65	8.72	10.53
Other--			
Milk hauling and marketing	69.85	79.34	80.26
Artificial insemination	13.89	14.33	14.65
Veterinary and medicine	40.77	41.87	42.45
Livestock hauling	6.01	5.98	6.10
Fuel, lube, and electricity	30.98	34.08	33.09
Machinery and building repairs	53.28	53.52	54.02
Hired labor	112.25	117.15	123.22
DHIA fees	6.73	6.99	7.18
Dairy supplies	25.66	26.33	27.84
Dairy assessment	45.20	24.77	4.01
Total, variable cash expenses	1,048.23	1,030.41	1,162.12
General farm overhead	63.53	75.37	77.97
Taxes and insurance	45.84	49.09	57.96
Interest	212.41	166.01	223.69
Total, fixed cash expenses	321.78	290.47	359.62
Total, cash expenses	1,370.01	1,320.88	1,521.74
Value of production less cash expenses	337.45	487.50	296.28
Capital replacement	227.61	235.01	258.24
Value of production less cash expenses and capital replacement	109.84	252.49	38.04
Economic (full ownership) costs:			
Variable cash expenses	1,048.23	1,030.41	1,162.12
General farm overhead	63.53	75.37	77.97
Taxes and insurance	45.84	49.09	57.96
Capital replacement	227.61	235.01	258.24
Allocated returns to owned inputs:			
Return to operating capital 2/	7.08	7.55	10.05
Return to other nonland capital 3/	76.19	92.24	109.17
Land 4/	20.19	20.23	33.23
Unpaid labor (23.07 hrs)	113.48	117.32	122.38
Total, economic costs	1,602.15	1,627.22	1,831.12
Residual returns to management and risk	105.31	181.16	-13.10

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 6--Corn Belt milk production costs, per cwt, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (1 cwt)	12.28	12.41	12.09
Cull cows	1.30	1.45	1.52
Total	13.58	13.86	13.61
Cash expenses:			
Feed--			
Concentrates (58.6 lbs)	3.91	3.68	4.06
By-products (2.6 lbs)	.17	.16	.18
Hay (44 lbs)	.64	.60	.91
Silage (72 lbs)	.36	.32	.57
Pasture and other forage	.08	.07	.09
Other--			
Milk hauling and marketing	.55	.60	.59
Artificial insemination	.11	.11	.11
Veterinary and medicine	.30	.30	.29
Livestock hauling	.05	.05	.05
Fuel, lube, and electricity	.25	.26	.25
Machinery and building repairs	.43	.42	.41
Hired labor	.91	.92	.95
DHIA fees	.05	.05	.05
Dairy supplies	.20	.19	.20
Dairy assessment	.36	.19	.03
Total, variable cash expenses	8.37	7.92	8.74
General farm overhead	.51	.58	.58
Taxes and insurance	.37	.38	.44
Interest	1.69	1.27	1.67
Total, fixed cash expenses	2.57	2.23	2.69
Total, cash expenses	10.94	10.15	11.43
Value of production less cash expenses	2.64	3.71	2.18
Capital replacement	1.84	1.82	1.96
Value of production less cash expenses and capital replacement	.80	1.89	.22
Economic (full ownership) costs:			
Variable cash expenses	8.37	7.92	8.74
General farm overhead	.51	.58	.58
Taxes and insurance	.37	.38	.44
Capital replacement	1.84	1.82	1.96
Allocated returns to owned inputs:			
Return to operating capital 1/	.06	.06	.08
Return to other nonland capital 2/	.61	.72	.83
Land 3/	.17	.16	.26
Unpaid labor (.17 hr)	.89	.88	.90
Total, economic costs	12.82	12.52	13.79
Residual returns to management and risk	.76	1.34	-.18

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 7--Northeast milk production costs, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (147.40 cwt) 1/	1,777.37	1,865.03	1,862.84
Cull cows	131.70	158.15	173.12
Total	1,909.07	2,023.18	2,035.96
Cash expenses:			
Feed--			
Concentrates (6,635.2 lbs)	414.33	423.93	489.07
By-products (513.6 lbs)	15.67	13.97	17.30
Hay (5,258 lbs)	88.07	89.81	106.62
Silage (14,496 lbs)	84.86	80.50	105.12
Pasture and other forage	6.09	6.37	7.19
Other--			
Milk hauling and marketing	99.16	112.23	114.45
Artificial insemination	23.28	24.17	24.87
Veterinary and medicine	32.55	33.39	34.34
Livestock hauling	1.68	1.67	1.70
Fuel, lube, and electricity	35.61	37.82	38.11
Machinery and building repairs	53.82	54.45	55.48
Hired labor	129.61	132.21	144.61
DHIA fees	10.12	10.47	10.75
Dairy supplies	27.62	28.14	30.02
Dairy assessment	50.09	27.41	4.42
Total, variable cash expenses	1,072.56	1,076.54	1,184.05
General farm overhead	88.82	122.17	130.91
Taxes and insurance	54.15	55.08	59.91
Interest	127.14	130.90	135.92
Total, fixed cash expenses	270.11	308.15	326.74
Total, cash expenses	1,342.67	1,384.69	1,510.79
Value of production less cash expenses	566.40	638.49	525.17
Capital replacement	246.89	248.78	262.24
Value of production less cash expenses and capital replacement	319.51	389.71	262.93
Economic (full ownership) costs:			
Variable cash expenses	1,072.56	1,076.54	1,184.05
General farm overhead	88.82	122.17	130.91
Taxes and insurance	54.15	55.08	59.91
Capital replacement	246.89	248.78	262.24
Allocated returns to owned inputs:			
Return to operating capital 2/	7.24	7.89	10.24
Return to other nonland capital 3/	78.45	93.30	108.50
Land 4/	22.19	28.71	37.31
Unpaid labor (20.29 hrs)	96.20	97.33	110.29
Total, economic costs	1,666.50	1,729.80	1,903.45
Residual returns to management and risk	242.57	293.38	132.51

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 8--Northeast milk production costs, per cwt, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (1 cwt)	12.77	12.93	12.65
Cull cows	.94	1.09	1.17
Total	13.71	14.02	13.82
Cash expenses:			
Feed--			
Concentrates (45.1 lbs)	2.97	2.93	3.32
By-products (3.4 lbs)	.11	.10	.11
Hay (36 lbs)	.63	.62	.72
Silage (98 lbs)	.61	.56	.71
Pasture and other forage	.04	.04	.05
Other--			
Milk hauling and marketing	.71	.78	.78
Artificial insemination	.17	.17	.17
Veterinary and medicine	.23	.23	.23
Livestock hauling	.01	.01	.01
Fuel, lube, and electricity	.26	.26	.26
Machinery and building repairs	.39	.38	.38
Hired labor	.92	.91	.97
DHIA fees	.07	.07	.07
Dairy supplies	.20	.19	.20
Dairy assessment	.36	.19	.03
Total, variable cash expenses	7.68	7.44	8.01
General farm overhead	.64	.85	.89
Taxes and insurance	.39	.38	.41
Interest	.91	.91	.92
Total, fixed cash expenses	1.94	2.14	2.22
Total, cash expenses	9.62	9.58	10.23
Value of production less cash expenses	4.09	4.44	3.59
Capital replacement	1.78	1.73	1.79
Value of production less cash expenses and capital replacement	2.31	2.71	1.80
Economic (full ownership) costs:			
Variable cash expenses	7.68	7.44	8.01
General farm overhead	.64	.85	.89
Taxes and insurance	.39	.38	.41
Capital replacement	1.78	1.73	1.79
Allocated returns to owned inputs:			
Return to operating capital 1/	.05	.05	.07
Return to other nonland capital 2/	.56	.65	.74
Land 3/	.16	.20	.25
Unpaid labor (.14 hr)	.69	.68	.76
Total, economic costs	11.95	11.98	12.92
Residual returns to management and risk	1.76	2.04	.90

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 9--Pacific milk production costs, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (172.25 cwt) 1/	1,894.85	1,943.73	1,917.46
Cull cows	140.06	173.63	186.73
Total	2,034.91	2,117.36	2,104.19
Cash expenses:			
Feed--			
Concentrates (6,231.4 lbs)	477.12	461.30	513.15
By-products (1,610 lbs)	80.50	75.47	95.21
Hay (9,340 lbs)	358.04	350.97	415.76
Silage (7,662 lbs)	46.19	43.17	51.27
Pasture and other forage	9.52	8.11	8.68
Other--			
Milk hauling and marketing	70.68	69.67	71.50
Artificial insemination	13.29	13.78	14.15
Veterinary and medicine	26.74	27.39	28.13
Livestock hauling	2.02	2.00	2.06
Fuel, lube, and electricity	24.88	26.96	28.22
Machinery and building repairs	55.89	56.28	57.48
Hired labor	215.04	227.32	231.00
DHIA fees	8.01	8.31	8.52
Dairy supplies	28.48	29.04	31.10
Dairy assessment	57.73	31.96	5.17
Total, variable cash expenses	1,474.13	1,431.73	1,561.40
General farm overhead	38.07	66.37	85.89
Taxes and insurance	27.22	28.47	29.67
Interest	137.56	79.40	118.19
Total, fixed cash expenses	202.85	174.24	233.75
Total, cash expenses	1,676.98	1,605.97	1,795.15
Value of production less cash expenses	357.93	511.39	309.04
Capital replacement	108.61	109.85	116.45
Value of production less cash expenses and capital replacement	249.32	401.54	192.59
Economic (full ownership) costs:			
Variable cash expenses	1,474.13	1,431.73	1,561.40
General farm overhead	38.07	66.37	85.89
Taxes and insurance	27.22	28.47	29.67
Capital replacement	108.61	109.85	116.45
Allocated returns to owned inputs:			
Return to operating capital 2/	9.95	10.49	13.51
Return to other nonland capital 3/	49.91	61.37	71.83
Land 4/	11.58	9.91	9.51
Unpaid labor (4.92 hrs)	26.50	27.77	28.35
Total, economic costs	1,745.97	1,745.96	1,916.61
Residual returns to management and risk	288.94	371.40	187.58

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 10--Pacific milk production costs, per cwt, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (1 cwt)	11.81	11.56	11.13
Cull cows	.88	1.04	1.09
Total	12.69	12.60	12.22
Cash expenses:			
Feed--			
Concentrates (36.5 lbs)	2.97	2.74	2.98
By-products (9.3 lbs)	.51	.45	.56
Hay (56 lbs)	2.24	2.08	2.41
Silage (44 lbs)	.29	.26	.30
Pasture and other forage	.06	.05	.05
Other--			
Milk hauling and marketing	.44	.42	.42
Artificial insemination	.08	.08	.08
Veterinary and medicine	.17	.16	.16
Livestock hauling	.01	.01	.01
Fuel, lube, and electricity	.16	.16	.17
Machinery and building repairs	.35	.34	.34
Hired labor	1.33	1.34	1.33
DHIA fees	.05	.05	.05
Dairy supplies	.18	.18	.18
Dairy assessment	.36	.19	.03
Total, variable cash expenses	9.20	8.51	9.07
General farm overhead	.24	.40	.50
Taxes and insurance	.17	.17	.18
Interest	.86	.47	.69
Total, fixed cash expenses	1.27	1.04	1.37
Total, cash expenses	10.47	9.55	10.44
Value of production less cash expenses	2.22	3.05	1.78
Capital replacement	.69	.67	.69
Value of production less cash expenses and capital replacement	1.53	2.38	1.09
Economic (full ownership) costs:			
Variable cash expenses	9.20	8.51	9.07
General farm overhead	.24	.40	.50
Taxes and insurance	.17	.17	.18
Capital replacement	.69	.67	.69
Allocated returns to owned inputs:			
Return to operating capital 1/	.06	.06	.08
Return to other nonland capital 2/	.32	.37	.42
Land 3/	.07	.06	.06
Unpaid labor (.03 hr)	.17	.17	.17
Total, economic costs	10.92	10.41	11.17
Residual returns to management and risk	1.77	2.19	1.05

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 11--Southeast milk production costs, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (125.66 cwt) 1/	1,824.25	1,846.47	1,868.82
Cull cows	116.90	142.64	159.86
Total	1,941.15	1,989.11	2,028.68
Cash expenses:			
Feed--			
Concentrates (10,375.5 lbs)	646.99	594.56	735.61
By-products (703.8 lbs)	45.90	50.23	51.16
Hay (2,792 lbs)	78.82	66.05	70.89
Silage (5,978 lbs)	54.44	42.08	54.97
Pasture and other forage	17.72	14.45	16.95
Other--			
Milk hauling and marketing	97.00	103.21	101.54
Artificial insemination	7.49	7.76	7.97
Veterinary and medicine	19.33	19.79	20.30
Livestock hauling	1.75	1.73	1.77
Fuel, lube, and electricity	18.19	20.66	21.15
Machinery and building repairs	24.51	24.70	25.15
Hired labor	253.99	269.76	280.82
DHIA fees	3.97	4.10	4.21
Dairy supplies	22.75	23.39	24.93
Dairy assessment	42.91	23.25	3.77
Total, variable cash expenses	1,335.76	1,265.72	1,421.19
General farm overhead	56.51	73.21	117.07
Taxes and insurance	30.30	30.16	32.87
Interest	138.99	82.75	65.75
Total, fixed cash expenses	225.80	186.12	215.69
Total, cash expenses	1,561.56	1,451.84	1,636.88
Value of production less cash expenses	379.59	537.27	391.80
Capital replacement	104.11	102.66	109.51
Value of production less cash expenses and capital replacement	275.48	434.61	282.29
Economic (full ownership) costs:			
Variable cash expenses	1,335.76	1,265.72	1,421.19
General farm overhead	56.51	73.21	117.07
Taxes and insurance	30.30	30.16	32.87
Capital replacement	104.11	102.66	109.51
Allocated returns to owned inputs:			
Return to operating capital 2/	9.02	9.27	12.29
Return to other nonland capital 3/	42.60	50.43	60.39
Land 4/	17.44	13.27	16.07
Unpaid labor (2.09 hrs)	9.74	10.01	10.60
Total, economic costs	1,605.48	1,554.73	1,779.99
Residual returns to management and risk	335.67	434.38	248.69

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 12--Southeast milk production costs, per cwt, 1986-88

Item	1986	1987	1988
		<u>Dollars</u>	
Gross value of production:			
Milk (1 cwt)	15.33	15.10	14.87
Cull cows	.98	1.17	1.27
Total	16.31	16.27	16.14
Cash expenses:			
Feed--			
Concentrates (82.6 lbs)	5.43	4.86	5.85
By-products (5.6 lbs)	.38	.41	.41
Hay (22 lbs)	.66	.54	.56
Silage (48 lbs)	.45	.34	.44
Pasture and other forage	.15	.12	.13
Other--			
Milk hauling and marketing	.82	.84	.81
Artificial insemination	.06	.06	.06
Veterinary and medicine	.16	.16	.16
Livestock hauling	.01	.01	.01
Fuel, lube, and electricity	.15	.17	.17
Machinery and building repairs	.21	.20	.20
Hired labor	2.14	2.21	2.24
DHIA fees	.03	.03	.03
Dairy supplies	.19	.19	.20
Dairy assessment	.36	.19	.03
Total, variable cash expenses	11.20	10.33	11.30
General farm overhead	.47	.60	.93
Taxes and insurance	.25	.25	.26
Interest	1.17	.68	.52
Total, fixed cash expenses	1.89	1.53	1.71
Total, cash expenses	13.09	11.86	13.01
Value of production less cash expenses	3.22	4.41	3.13
Capital replacement	.87	.84	.87
Value of production less cash expenses and capital replacement	2.35	3.57	2.26
Economic (full ownership) costs:			
Variable cash expenses	11.20	10.33	11.30
General farm overhead	.47	.60	.93
Taxes and insurance	.25	.25	.26
Capital replacement	.87	.84	.87
Allocated returns to owned inputs:			
Return to operating capital 1/	.08	.08	.10
Return to other nonland capital 2/	.36	.41	.48
Land 3/	.15	.11	.13
Unpaid labor (.02 hr)	.08	.08	.08
Total, economic costs	13.46	12.70	14.15
Residual returns to management and risk	2.85	3.57	1.99

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 13--Southern Plains milk production costs, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (139.24 cwt) 1/	1,719.69	1,788.57	1,838.01
Cull cows	139.52	167.00	177.65
Total	1,859.21	1,955.57	2,015.66
Cash expenses:			
Feed--			
Concentrates (8,461.5 lbs)	558.09	517.69	646.46
By-products (370 lbs)	17.09	16.54	17.35
Hay (8,094 lbs)	207.90	208.56	261.07
Silage (1,752 lbs)	15.47	12.59	18.23
Pasture and other forage	17.37	15.10	18.98
Other--			
Milk hauling and marketing	96.10	94.00	100.26
Artificial insemination	16.58	17.17	17.64
Veterinary and medicine	10.11	10.34	10.61
Livestock hauling	2.73	2.73	2.79
Fuel, lube, and electricity	20.65	22.74	23.21
Machinery and building repairs	30.41	30.64	31.24
Hired labor	197.50	204.27	204.67
DHIA fees	8.89	9.20	9.46
Dairy supplies	24.19	24.70	26.38
Dairy assessment	45.52	24.81	4.18
Total, variable cash expenses	1,268.60	1,211.08	1,392.53
General farm overhead	59.12	78.42	122.17
Taxes and insurance	39.72	42.29	46.58
Interest	107.65	80.57	91.65
Total, fixed cash expenses	206.49	201.28	260.40
Total, cash expenses	1,475.09	1,412.36	1,652.93
Value of production less cash expenses	384.12	543.21	362.73
Capital replacement	121.29	122.31	134.67
Value of production less cash expenses and capital replacement	262.83	420.90	228.06
Economic (full ownership) costs:			
Variable cash expenses	1,268.60	1,211.08	1,392.53
General farm overhead	59.12	78.42	122.17
Taxes and insurance	39.72	42.29	46.58
Capital replacement	121.29	122.31	134.67
Allocated returns to owned inputs:			
Return to operating capital 2/	8.56	8.87	12.05
Return to other nonland capital 3/	49.05	59.15	71.09
Land 4/	26.43	23.22	28.74
Unpaid labor (14 hrs)	69.44	71.82	71.96
Total, economic costs	1,642.21	1,617.16	1,879.79
Residual returns to management and risk	217.00	338.41	135.87

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 14--Southern Plains milk production costs, per cwt, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (1 cwt)	13.60	13.70	13.20
Cull cows	1.10	1.28	1.28
Total	14.70	14.98	14.48
Cash expenses:			
Feed--			
Concentrates (60.8 lbs)	4.41	3.97	4.64
By-products (2.7 lbs)	.14	.13	.12
Hay (58 lbs)	1.64	1.60	1.87
Silage (12 lbs)	.12	.10	.13
Pasture and other forage	.14	.12	.14
Other--			
Milk hauling and marketing	.76	.72	.72
Artificial insemination	.13	.13	.13
Veterinary and medicine	.08	.08	.08
Livestock hauling	.02	.02	.02
Fuel, lube, and electricity	.16	.17	.17
Machinery and building repairs	.24	.23	.22
Hired labor	1.56	1.56	1.47
DHIA fees	.07	.07	.07
Dairy supplies	.19	.19	.19
Dairy assessment	.36	.19	.03
Total, variable cash expenses	10.02	9.28	10.00
General farm overhead	.47	.60	.88
Taxes and insurance	.31	.32	.33
Interest	.85	.62	.66
Total, fixed cash expenses	1.63	1.54	1.87
Total, cash expenses	11.65	10.82	11.87
Value of production less cash expenses	3.05	4.16	2.61
Capital replacement	.96	.94	.97
Value of production less cash expenses and capital replacement	2.09	3.22	1.64
Economic (full ownership) costs:			
Variable cash expenses	10.02	9.28	10.00
General farm overhead	.47	.60	.88
Taxes and insurance	.31	.32	.33
Capital replacement	.96	.94	.97
Allocated returns to owned inputs:			
Return to operating capital 1/	.07	.07	.09
Return to other nonland capital 2/	.39	.45	.51
Land 3/	.21	.18	.21
Unpaid labor (.10 hr)	.55	.55	.52
Total, economic costs	12.98	12.39	13.51
Residual returns to management and risk	1.72	2.59	.97

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 15--Upper Midwest milk production costs, per cow, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (139.43 cwt) 1/	1,556.09	1,630.27	1,662.73
Cull cows	144.27	173.82	186.86
Total	1,700.36	1,804.09	1,849.59
Cash expenses:			
Feed--			
Concentrates (6,323.1 lbs)	359.03	369.11	414.69
By-products (200.5 lbs)	18.43	16.86	21.06
Hay (6,424 lbs)	123.84	126.59	218.09
Silage (12,580 lbs)	94.63	94.64	186.62
Pasture and other forage	6.97	7.25	10.84
Other--			
Milk hauling and marketing	53.70	72.96	76.81
Artificial insemination	15.30	15.87	16.32
Veterinary and medicine	24.87	25.33	25.94
Livestock hauling	5.51	5.47	5.59
Fuel, lube, and electricity	29.66	31.98	31.25
Machinery and building repairs	57.35	57.80	58.75
Hired labor	77.59	81.73	84.15
DHIA fees	7.81	8.05	8.27
Dairy supplies	24.80	25.19	26.87
Dairy assessment	46.26	25.58	4.18
Total, variable cash expenses	945.75	964.41	1,189.43
General farm overhead	100.64	105.16	132.09
Taxes and insurance	51.19	53.30	66.70
Interest	202.42	181.13	165.71
Total, fixed cash expenses	354.25	339.59	364.50
Total, cash expenses	1,300.00	1,304.00	1,553.93
Value of production less cash expenses	400.36	500.09	295.66
Capital replacement	262.49	265.63	304.61
Value of production less cash expenses and capital replacement	137.87	234.46	-8.95
Economic (full ownership) costs:			
Variable cash expenses	945.75	964.41	1,189.43
General farm overhead	100.64	105.16	132.09
Taxes and insurance	51.19	53.30	66.70
Capital replacement	262.49	265.63	304.61
Allocated returns to owned inputs:			
Return to operating capital 2/	6.38	7.06	10.29
Return to other nonland capital 3/	82.74	99.22	120.69
Land 4/	12.91	11.79	21.61
Unpaid labor (16.93 hrs)	76.19	79.50	82.21
Total, economic costs	1,538.29	1,586.07	1,927.63
Residual returns to management and risk	162.07	218.02	-78.04

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 16--Upper Midwest milk production costs, per cwt, 1986-88

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Milk (1 cwt)	12.10	12.10	11.92
Cull cows	1.13	1.30	1.35
Total	13.23	13.40	13.27
Cash expenses:			
Feed--			
Concentrates (45.6 lbs)	2.81	2.76	2.99
By-products (1.4 lbs)	.14	.12	.15
Hay (46 lbs)	.97	.95	1.58
Silage (90 lbs)	.74	.70	1.34
Pasture and other forage	.06	.05	.08
Other--			
Milk hauling and marketing	.42	.54	.55
Artificial insemination	.12	.12	.12
Veterinary and medicine	.19	.19	.19
Livestock hauling	.04	.04	.04
Fuel, lube, and electricity	.23	.24	.22
Machinery and building repairs	.45	.43	.42
Hired labor	.61	.61	.61
DHIA fees	.06	.06	.06
Dairy supplies	.19	.19	.19
Dairy assessment	.36	.19	.03
Total, variable cash expenses	7.39	7.19	8.57
General farm overhead	.78	.78	.95
Taxes and insurance	.40	.40	.48
Interest	1.57	1.35	1.19
Total, fixed cash expenses	2.75	2.53	2.62
Total, cash expenses	10.14	9.72	11.19
Value of production less cash expenses	3.09	3.68	2.08
Capital replacement	2.05	1.98	2.19
Value of production less cash expenses and capital replacement	1.04	1.70	-.11
Economic (full ownership) costs:			
Variable cash expenses	7.39	7.19	8.57
General farm overhead	.78	.78	.95
Taxes and insurance	.40	.40	.48
Capital replacement	2.05	1.98	2.19
Allocated returns to owned inputs:			
Return to operating capital 1/	.05	.05	.07
Return to other nonland capital 2/	.65	.74	.87
Land 3/	.10	.09	.16
Unpaid labor (.12 hr)	.60	.60	.60
Total, economic costs	12.02	11.83	13.89
Residual returns to management and risk	1.21	1.57	-.62

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 17--U.S. fed cattle production costs, all sizes of operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Fed beef (100 lbs)	58.32	71.63	74.32
Total	58.32	71.63	74.32
Cash expenses:			
Feeders--			
Feeders (0.58 cwt)	34.68	44.83	47.35
Feed--			
Grain (2.61 cwt)	9.56	7.00	10.05
Protein supplements (.26 cwt)	2.70	2.58	2.87
Salt and minerals (.02 cwt)	.13	.13	.13
Hay (.03 ton)	.91	.91	1.10
Silage (.07 ton)	1.27	1.18	2.18
Haylage (.01 ton)	.09	.08	.14
Other--			
Veterinary and medicine	.59	.60	.62
Livestock hauling	.35	.35	.36
Marketing	.12	.12	.13
Bedding	.12	.13	.13
Fuel, lube, and electricity	.61	.59	.60
Machinery and building repairs	.84	.84	.86
Hired labor (.59 hr)	.75	.71	.75
Miscellaneous	.70	.72	.76
Manure credit	-.07	-.07	-.07
Total, variable cash expenses	53.35	60.70	67.96
General farm overhead	2.21	2.75	3.46
Taxes and insurance	.28	.30	.30
Hired management	.10	.09	.10
Interest	5.84	6.83	7.13
Total, fixed cash expenses	8.43	9.97	10.99
Total, cash expenses	61.78	70.67	78.95
Value of production less cash expenses	-3.46	.96	-4.63
Capital replacement	1.89	1.89	1.92
Value of production less cash expenses and capital replacement	-5.35	-.93	-6.55
Economic (full ownership) costs:			
Variable cash expenses	53.35	60.70	67.96
General farm overhead	2.21	2.75	3.46
Taxes and insurance	.28	.30	.30
Hired management	.10	.09	.10
Capital replacement	1.89	1.89	1.92
Allocated returns to owned inputs:			
Return to operating capital 2/	.59	.72	.95
Return to other nonland capital 3/	.38	.44	.49
Land 4/	.10	.11	.13
Unpaid labor (.35 hr)	1.11	1.15	1.22
Total, economic costs	60.01	68.15	76.53
Residual returns to management and risk	-1.69	3.48	-2.21

1/ Of liveweight sold. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 18-Fed cattle production costs, commercial feedlots,  
all sizes of operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt 1/</u>			
Gross value of production:			
Fed beef (100 lbs)	58.52	74.63	75.94
Total	58.52	74.63	75.94
Cash expenses:			
Feeders--			
Feeders (.65 cwt)	37.66	49.25	51.95
Feed--			
Grain (2.48 cwt)	9.49	6.97	10.02
Protein supplements (.25 cwt)	2.52	2.39	2.67
Salt and minerals (.04 cwt)	.19	.19	.19
Hay (.01 ton)	.92	.94	.99
Silage (.01 ton)	.26	.25	.29
Other--			
Veterinary and medicine	.52	.53	.55
Livestock hauling	.13	.13	.13
Fuel, lube, and electricity	.36	.36	.37
Machinery and building repairs	.30	.30	.31
Hired labor (.85 hr)	.85	.77	.81
Miscellaneous	1.08	1.10	1.17
Manure credit	-.07	-.06	-.07
Total, variable cash expenses	54.21	63.12	69.38
Taxes and insurance	.07	.07	.07
Hired management	.15	.14	.15
Interest	4.33	5.90	6.76
Total, fixed cash expenses	4.55	6.11	6.98
Total, cash expenses	58.76	69.23	76.36
Value of production less cash expenses	-.24	5.40	-.42
Capital replacement	.47	.47	.48
Value of production less cash expenses and capital replacement	-.71	4.93	-.90
Economic (full ownership) costs:			
Variable cash expenses	54.21	63.12	69.38
Taxes and insurance	.07	.07	.07
Hired management	.15	.14	.15
Capital replacement	.47	.47	.48
Allocated returns to owned inputs:			
Return to operating capital 2/	.59	.74	.96
Return to other nonland capital 3/	.11	.12	.14
Land 4/	.02	.02	.02
Total, economic costs	55.62	64.68	71.20
Residual returns to management and risk	2.90	9.95	4.74

1/ Of liveweight sold. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 19--Fed cattle production costs, farmer feedlots,  
all sizes of operation, 1986-88

Item	1986	1987	1988
	<u>Dollars per cwt 1/</u>		
Gross value of production:			
Fed beef (100 lbs)	57.95	65.98	71.29
Total	57.95	65.98	71.29
Cash expenses:			
Feeders--			
Feeders (.46 cwt)	29.08	36.48	38.67
Feed--			
Grain (2.86 cwt)	9.70	7.05	10.10
Protein supplements (.27 cwt)	3.03	2.95	3.26
Hay (.05 cwt)	.89	.85	1.31
Silage (.18 ton)	3.17	2.95	5.74
Haylage (.03 ton)	.25	.24	.40
Pasture (.00 ton)	.01	.01	.01
Other--			
Veterinary and medicine	.71	.72	.74
Livestock hauling	.78	.78	.79
Marketing	.33	.34	.36
Bedding	.36	.36	.38
Fuel, lube, and electricity	1.08	1.02	1.02
Machinery and building repairs	1.84	1.85	1.89
Hired labor (.11 hr)	.57	.59	.63
Manure credit	-.08	-.07	-.08
Total, variable cash expenses	51.72	56.12	65.22
General farm overhead	6.37	7.92	9.98
Taxes and insurance	.68	.73	.74
Interest	8.69	8.58	7.84
Total, fixed cash expenses	15.74	17.23	18.56
Total, cash expenses	67.46	73.35	83.78
Value of production less cash expenses	-9.51	-7.37	-12.49
Capital replacement	4.56	4.57	4.64
Value of production less cash expenses and capital replacement	-14.07	-11.94	-17.13
Economic (full ownership) costs:			
Variable cash expenses	51.72	56.12	65.22
General farm overhead	6.37	7.92	9.98
Taxes and insurance	.68	.73	.74
Capital replacement	4.56	4.57	4.64
Allocated returns to owned inputs:			
Return to operating capital 2/	.58	.69	.94
Return to other nonland capital 3/	.91	1.04	1.17
Land 4/	.25	.29	.34
Unpaid labor (1.02 hrs)	3.19	3.31	3.52
Total, economic costs	68.26	74.67	86.55
Residual returns to management and risk	-10.31	-8.69	-15.26

1/ Of liveweight sold. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 20--U.S. cow-calf production costs, all sizes of operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (112.7 lbs) 1/	78.17	91.82	114.78
Heifer calves (79.7 lbs)	47.81	50.35	61.95
Feeder steers (106.7 lbs)	66.69	82.61	85.47
Feeder heifers (76.5 lbs)	43.97	53.33	56.75
Cull cows (80.9 lbs)	28.83	33.14	31.95
Total	265.47	311.25	350.90
Cash expenses:			
Feed--			
Grain (2.05 cwt)	7.62	6.19	9.05
Protein supplements (1.47 cwt)	15.83	15.49	17.17
Salt and minerals (.33 cwt)	1.96	1.97	1.98
Hay (1.25 ton)	33.34	31.77	44.59
Silage (.29 ton)	5.55	5.09	7.00
Pasture	34.47	31.78	34.90
Public grazing	.69	.71	.75
Crop residue	.09	.07	.08
Other--			
Veterinary and medicine	6.60	6.72	6.91
Livestock hauling	1.86	1.85	1.89
Marketing	4.16	4.24	4.54
Custom feed mixing	.27	.28	.29
Fuel, lube, and electricity	11.90	12.76	12.71
Machinery and building repairs	21.71	21.83	22.20
Hired labor (3.20 hr)	14.40	14.47	15.06
Miscellaneous	.21	.21	.23
Total, variable cash expenses	160.66	155.43	179.35
General farm overhead	29.20	37.35	49.13
Taxes and insurance	24.06	26.38	28.07
Interest	39.82	40.46	38.60
Total, fixed cash expenses	93.08	104.19	115.80
Total, cash expenses	253.74	259.62	295.15
Value of production less cash expenses	11.73	51.63	55.75
Capital replacement	63.37	64.31	66.13
Value of production less cash expenses and capital replacement	-51.64	-12.68	-10.38
Economic (full ownership) costs:			
Variable cash expenses	160.66	155.43	179.35
General farm overhead	29.20	37.35	49.13
Taxes and insurance	24.06	26.38	28.07
Capital replacement	63.37	64.31	66.13
Allocated returns to owned inputs:			
Return to operating capital 2/	4.34	4.55	6.21
Return to other nonland capital 3/	23.05	28.21	33.95
Land 4/	56.21	61.56	69.89
Unpaid labor (27.62 hrs)	82.56	82.30	87.05
Total, economic costs	443.45	460.09	519.78
Residual returns to management and risk	-177.98	-148.84	-168.88

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 21--U.S. cow-calf production costs, operations with 100 or fewer cows, 1986-88

Item	1986	1987	1988
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (124.4 lbs) 1/	86.80	101.93	127.39
Heifer calves (85 lbs)	50.96	53.62	65.93
Feeder steers (88.5 lbs)	55.59	68.89	71.32
Feeder heifers (72.2 lbs)	41.27	50.10	53.35
Cull cows (75.3 lbs)	26.98	31.03	29.92
Total	261.60	305.57	347.91
Cash expenses:			
Feed--			
Grain (2.17 cwt)	7.92	6.32	9.31
Protein supplements (1.24 cwt)	13.46	13.19	14.62
Salt and minerals (.33 cwt)	1.96	1.97	1.98
Hay (1.40 ton)	40.04	38.75	54.89
Silage (.27 ton)	5.13	4.71	6.73
Pasture	27.97	25.97	28.69
Public grazing	.36	.37	.38
Other--			
Veterinary and medicine	6.62	6.75	6.95
Livestock hauling	1.54	1.53	1.56
Marketing	4.68	4.79	5.12
Custom feed mixing	.41	.42	.43
Fuel, lube, and electricity	14.32	15.45	15.32
Machinery and building repairs	26.21	26.39	26.80
Hired labor (1.39 hrs)	6.15	6.31	6.57
Miscellaneous	.18	.19	.20
Total, variable cash expenses	156.95	153.11	179.55
General farm overhead	28.78	36.67	48.71
Taxes and insurance	27.31	29.20	31.43
Interest	39.24	39.72	38.27
Total, fixed cash expenses	95.33	105.59	118.41
Total, cash expenses	252.28	258.70	297.96
Value of production less cash expenses	9.32	46.87	49.95
Capital replacement	76.12	77.09	78.87
Value of production less cash expenses and capital replacement	-66.80	-30.22	-28.92
Economic (full ownership) costs:			
Variable cash expenses	156.95	153.11	179.55
General farm overhead	28.78	36.67	48.71
Taxes and insurance	27.31	29.20	31.43
Capital replacement	76.12	77.09	78.87
Allocated returns to owned inputs:			
Return to operating capital 2/	4.24	4.49	6.21
Return to other nonland capital 3/	26.00	31.64	37.82
Land 4/	58.93	61.71	71.18
Unpaid labor (37.75 hrs)	112.39	113.25	119.80
Total, economic costs	490.72	507.16	573.57
Residual returns to management and risk	-229.12	-201.59	-225.66

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 22--U.S. cow-calf production costs, operations with 100-499 cows,  
1986-88

Item	1986	1987	1988
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (107.2 lbs) 1/	74.18	86.96	108.82
Heifer calves (79 lbs)	47.76	50.26	61.89
Feeder steers (119.8 lbs)	74.80	92.87	95.87
Feeder heifers (79.2 lbs)	45.88	55.74	59.21
Cull cows (87.7 lbs)	31.14	35.74	34.47
Total	273.76	321.57	360.26
Cash expenses:			
Feed--			
Grain (2.42 cwt)	9.07	7.44	10.90
Protein supplements (1.83 cwt)	19.95	19.46	21.57
Salt and minerals (.34 cwt)	1.94	1.95	1.96
Hay (1.24 ton)	28.39	26.21	36.44
Silage (.39 ton)	7.44	6.80	9.11
Pasture	39.03	35.88	39.32
Public grazing	1.07	1.12	1.17
Crop residue	.27	.23	.27
Other--			
Veterinary and medicine	7.06	7.16	7.37
Livestock hauling	1.96	1.94	1.99
Marketing	3.82	3.88	4.15
Custom feed mixing	.14	.14	.14
Fuel, lube, and electricity	10.65	11.30	11.30
Machinery and building repairs	17.98	18.05	18.39
Hired labor (4.39 hr)	19.62	19.65	20.47
Miscellaneous	.34	.35	.38
Total, variable cash expenses	168.73	161.56	184.93
General farm overhead	30.11	38.59	50.44
Taxes and insurance	22.77	26.00	27.22
Interest	41.06	41.80	39.63
Total, fixed cash expenses	93.94	106.39	117.29
Total, cash expenses	262.67	267.95	302.22
Value of production less cash expenses	11.09	53.62	58.04
Capital replacement	52.44	53.31	55.14
Value of production less cash expenses and capital replacement	-41.35	.31	2.90
Economic (full ownership) costs:			
Variable cash expenses	168.73	161.56	184.93
General farm overhead	30.11	38.59	50.44
Taxes and insurance	22.77	26.00	27.22
Capital replacement	52.44	53.31	55.14
Allocated returns to owned inputs:			
Return to operating capital 2/	4.56	4.73	6.40
Return to other nonland capital 3/	20.42	25.12	30.46
Land 4/	57.99	68.22	75.98
Unpaid labor (20.68 hrs)	62.74	60.50	63.79
Total, economic costs	419.76	438.03	494.36
Residual returns to management and risk	-146.00	-116.46	-134.10

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 23--U.S. cow-calf production costs, operations with 500 or more cows, 1986-88

Item	1986	1987	1988
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (81.1 lbs) 1/	55.25	65.24	81.13
Heifer calves (61.5 lbs)	36.35	38.47	47.28
Feeder steers (145.1 lbs)	89.79	110.77	115.16
Feeder heifers (86.7 lbs)	49.84	60.11	64.11
Cull cows (86.6 lbs)	30.62	35.30	34.01
Total	261.85	309.89	341.69
Cash expenses:			
Feed--			
Grain (0.79 cwt)	3.39	2.99	4.06
Protein supplements (1.54 cwt)	15.73	15.46	17.17
Salt and minerals (.34 cwt)	1.98	2.00	2.00
Hay (.69 ton)	19.60	18.23	24.39
Silage (.14 ton)	2.67	2.51	3.10
Pasture	48.45	44.25	48.25
Public grazing	1.08	1.11	1.17
Other--			
Veterinary and medicine	5.51	5.62	5.77
Livestock hauling	2.86	2.84	2.92
Marketing	2.98	3.06	3.28
Bedding	.05	.05	.05
Custom feed mixing	.05	.05	.05
Fuel, lube, and electricity	5.76	6.08	6.20
Machinery and building repairs	13.36	13.31	13.51
Hired labor (7.19 hrs)	33.05	32.95	34.34
Miscellaneous	.02	.02	.02
Total, variable cash expenses	156.54	150.53	166.28
General farm overhead	28.80	37.19	47.84
Taxes and insurance	15.08	16.96	17.69
Interest	39.28	40.28	37.59
Total, fixed cash expenses	83.16	94.43	103.12
Total, cash expenses	239.70	244.96	269.40
Value of production less cash expenses	22.15	64.93	72.29
Capital replacement	40.49	41.34	43.09
Value of production less cash expenses and capital replacement	-18.34	23.59	29.20
Economic (full ownership) costs:			
Variable cash expenses	156.54	150.53	166.28
General farm overhead	28.80	37.19	47.84
Taxes and insurance	15.08	16.96	17.69
Capital replacement	40.49	41.34	43.09
Allocated returns to owned inputs:			
Return to operating capital 2/	4.23	4.41	5.75
Return to other nonland capital 3/	17.99	22.29	27.26
Land 4/	42.37	46.68	51.92
Unpaid labor (5.76 hrs)	16.90	16.48	17.25
Total, economic costs	322.40	335.88	377.08
Residual returns to management and risk	-60.55	-25.99	-35.39

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 24--Cow-calf production costs, all sizes of operation,  
Great Plains, 1986-88

Item	1986	1987	1988
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (104.5 lbs) 1/	72.70	85.30	106.57
Heifer calves (82.1 lbs)	50.86	53.45	65.70
Feeder steers (121.8 lbs)	78.88	97.86	101.08
Feeder heifers (84.5 lbs)	50.70	61.66	65.43
Cull cows (62.4 lbs)	21.53	24.68	23.85
Total	274.67	322.95	362.63
Cash expenses:			
Feed--			
Grain (1.86 cwt)	6.56	5.97	9.27
Protein supplements (2.28 cwt)	23.78	23.25	25.70
Salt and minerals (.35 cwt)	1.94	1.95	1.96
Hay (1.09 ton)	26.06	24.09	34.04
Silage (.38 ton)	7.66	6.89	8.15
Pasture	33.52	30.29	32.84
Public grazing	.86	.91	.94
Crop residue	.22	.18	.21
Other--			
Veterinary and medicine	6.57	6.68	6.88
Livestock hauling	1.65	1.64	1.67
Marketing	5.03	5.12	5.48
Bedding	.02	.02	.02
Fuel, lube, and electricity	11.97	13.31	13.08
Machinery and building repairs	19.72	19.78	20.14
Hired labor (3.03 hrs)	12.61	12.82	13.08
Miscellaneous	.54	.55	.58
Total, variable cash expenses	158.71	153.45	174.04
General farm overhead	30.21	38.75	50.77
Taxes and insurance	19.33	22.25	22.65
Interest	41.20	41.98	39.89
Total, fixed cash expenses	90.74	102.98	113.31
Total, cash expenses	249.45	256.43	287.35
Value of production less cash expenses	25.22	66.52	75.28
Capital replacement	56.12	57.45	59.36
Value of production less cash expenses and capital replacement	-30.90	9.07	15.92
Economic (full ownership) costs:			
Variable cash expenses	158.71	153.45	174.04
General farm overhead	30.21	38.75	50.77
Taxes and insurance	19.33	22.25	22.65
Capital replacement	56.12	57.45	59.36
Allocated returns to owned inputs:			
Return to operating capital 2/	4.28	4.50	6.02
Return to other nonland capital 3/	21.05	25.81	31.05
Land 4/	54.68	61.78	67.36
Unpaid labor (22.69 hrs)	72.75	72.51	74.75
Total, economic costs	417.13	436.50	486.00
Residual returns to management and risk	-142.46	-113.55	-123.37

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 25--Cow-calf production costs, all sizes of operation,  
North-Central, 1986-88

Item	1986	1987	1988
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (121.1 lbs) 1/	84.03	98.57	123.37
Heifer calves (74 lbs)	44.03	46.31	56.97
Feeder steers (96 lbs)	59.93	74.63	76.93
Feeder heifers (80.8 lbs)	45.03	54.87	58.20
Cull cows (99.9 lbs)	36.70	42.35	40.90
Total	269.72	316.73	356.37
Cash expenses:			
Feed--			
Grain (2.42 cwt)	8.12	5.93	8.44
Protein supplements (1.02 cwt)	12.45	12.11	13.37
Salt and minerals (.32 cwt)	1.99	2.00	2.01
Hay (1.46 ton)	40.33	41.26	68.70
Silage (.45 ton)	7.80	7.26	14.13
Pasture	14.11	12.61	14.79
Other--			
Veterinary and medicine	6.30	6.43	6.62
Livestock hauling	2.03	2.02	2.07
Marketing	2.71	2.77	2.96
Custom feed mixing	.13	.13	.14
Fuel, lube, and electricity	12.02	12.29	11.86
Machinery and building repairs	23.12	23.28	23.62
Hired labor (.85 hr)	3.69	3.86	4.01
Total, variable cash expenses	134.80	131.95	172.72
General farm overhead	29.67	38.01	49.89
Taxes and insurance	46.00	50.03	57.78
Interest	40.46	41.17	39.20
Total, fixed cash expenses	116.13	129.21	146.87
Total, cash expenses	250.93	261.16	319.59
Value of production less cash expenses	18.79	55.57	36.78
Capital replacement	72.48	72.77	73.91
Value of production less cash expenses and capital replacement	-53.69	-17.20	-37.13
Economic (full ownership) costs:			
Variable cash expenses	134.80	131.95	172.72
General farm overhead	29.67	38.01	49.89
Taxes and insurance	46.00	50.03	57.78
Capital replacement	72.48	72.77	73.91
Allocated returns to owned inputs:			
Return to operating capital 2/	3.64	3.87	5.98
Return to other nonland capital 3/	26.46	32.29	38.86
Land 4/	63.23	64.59	84.68
Unpaid labor (34.82 hrs)	100.30	104.13	110.62
Total, economic costs	476.58	497.64	594.44
Residual returns to management and risk	-206.86	-180.91	-238.07

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 26--Cow-calf production costs, all sizes of operation, South, 1986-88

Item	1986	1987	1988
<u>Dollars per cow</u>			
Gross value of production:			
Steer calves (134.1 lbs) 1/	93.80	109.94	137.74
Heifer calves (91 lbs)	51.62	54.22	66.81
Feeder steers (54.3 lbs)	31.10	38.70	39.96
Feeder heifers (40.8 lbs)	20.70	25.14	26.78
Cull cows (87.5 lbs)	32.14	37.08	35.78
Total	229.36	265.08	307.07
Cash expenses:			
Feed--			
Grain (2.43 cwt)	9.85	7.14	10.25
Protein supplements (.76 cwt)	8.86	8.69	9.50
Salt and minerals (.27 cwt)	1.91	1.92	1.93
Hay (1.23 ton)	41.16	39.00	47.95
Silage (.22 ton)	4.07	3.77	4.50
Pasture	49.73	47.44	53.97
Other--			
Veterinary and medicine	6.17	6.31	6.48
Livestock hauling	1.00	1.00	1.02
Marketing	3.79	3.87	4.14
Custom feed mixing	1.24	1.26	1.32
Fuel, lube, and electricity	12.39	13.60	13.69
Machinery and building repairs	25.88	25.98	26.46
Hired labor (3.31 hrs)	15.62	16.41	17.46
Total, variable cash expenses	181.67	176.39	198.67
General farm overhead	25.23	31.81	42.99
Taxes and insurance	21.76	23.06	23.29
Interest	34.40	34.46	33.78
Total, fixed cash expenses	81.39	89.33	100.06
Total, cash expenses	263.06	265.72	298.73
Value of production less cash expenses	-33.70	-.64	8.34
Capital replacement	80.48	80.46	81.93
Value of production less cash expenses and capital replacement	-114.18	-81.10	-73.59
Economic (full ownership) costs:			
Variable cash expenses	181.67	176.39	198.67
General farm overhead	25.23	31.81	42.99
Taxes and insurance	21.76	23.06	23.29
Capital replacement	80.48	80.46	81.93
Allocated returns to owned inputs:			
Return to operating capital 2/	4.91	5.17	6.87
Return to other nonland capital 3/	27.11	32.94	39.62
Land 4/	72.81	81.34	91.06
Unpaid labor (33.23 hrs)	84.30	86.48	95.46
Total, economic costs	498.27	517.65	579.89
Residual returns to management and risk	-268.91	-252.57	-272.82

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 27--Cow-calf production costs, all sizes of operation, West, 1986-88

Item	1986	1987	1988
<hr/>			
	<u>Dollars per cow</u>		
Gross value of production:			
Steer calves (102.1 lbs) 1/	69.96	82.12	102.85
Heifer calves (70.4 lbs)	42.53	44.77	55.13
Feeder steers (133.5 lbs)	81.12	100.92	104.00
Feeder heifers (90.2 lbs)	51.49	62.68	66.47
Cull cows (92.5 lbs)	32.17	37.12	35.82
Total	277.27	327.61	364.27
<hr/>			
Cash expenses:			
Feed--			
Grain (1.77 cwt)	7.16	5.92	8.10
Protein supplements (1.03 cwt)	11.22	10.91	12.08
Salt and minerals (.36 cwt)	2.00	2.01	2.02
Hay (1.36 ton)	33.61	31.39	41.90
Silage (.09 ton)	1.79	1.67	1.97
Pasture	38.07	34.67	36.91
Public grazing	1.47	1.52	1.60
Other--			
Veterinary and medicine	7.20	7.34	7.55
Livestock hauling	2.80	2.81	2.87
Marketing	4.09	4.18	4.45
Fuel, lube, and electricity	11.29	11.46	11.89
Machinery and building repairs	20.49	20.61	20.99
Hired labor (5.06 hrs)	23.93	23.23	24.45
Total, variable cash expenses	165.12	157.72	176.78
General farm overhead	30.50	39.31	51.00
Taxes and insurance	17.84	18.94	19.53
Interest	41.59	42.59	40.07
Total, fixed cash expenses	89.93	100.84	110.60
Total, cash expenses	255.05	258.56	287.38
Value of production less cash expenses	22.22	69.05	76.89
Capital replacement	54.48	55.66	58.46
Value of production less cash expenses and capital replacement	-32.26	13.39	18.43
<hr/>			
Economic (full ownership) costs:			
Variable cash expenses	165.12	157.72	176.78
General farm overhead	30.50	39.31	51.00
Taxes and insurance	17.84	18.94	19.53
Capital replacement	54.48	55.66	58.46
Allocated returns to owned inputs:			
Return to operating capital 2/	4.46	4.62	6.12
Return to other nonland capital 3/	20.51	25.14	30.43
Land 4/	40.06	41.95	45.36
Unpaid labor (25.77 hrs)	84.16	79.11	83.41
Total, economic costs	417.13	422.45	471.09
Residual returns to management and risk	-139.86	-94.84	-106.82

1/ Quantities per cow in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 28--U.S. farrow-to-finish production costs, all sizes of operation,  
1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.6 lbs) 1/	2.46	2.48	1.84
Slaughter hogs (94.4 lbs)	48.00	52.46	41.95
Total	50.46	54.94	43.79
Cash expenses:			
Feed--			
Grain (348.2 lbs)	12.15	8.86	12.63
Protein supplements (81.2 lbs)	9.88	9.89	11.50
Pasture (.01 ac)	.03	.03	.04
Other--			
Veterinary and medicine	.55	.56	.57
Livestock hauling	.13	.13	.13
Marketing	.35	.36	.38
Bedding (12 lbs)	.15	.15	.15
Fuel, lube, and electricity	1.67	1.64	1.66
Machinery and building repairs	2.33	2.34	2.37
Hired labor (.19 hr)	1.19	1.26	1.37
Manure credit	-.19	-.17	-.19
Total, variable cash expenses	28.24	25.05	30.61
General farm overhead	3.53	4.39	4.82
Taxes and insurance	.73	.74	.74
Interest	6.05	3.85	4.38
Total, fixed cash expenses	10.31	8.98	9.94
Total, cash expenses	38.55	34.03	40.55
Value of production less cash expenses	11.91	20.91	3.24
Capital replacement	5.60	5.61	5.49
Value of production less cash expenses and capital replacement	6.31	15.30	-2.25
Economic (full ownership) costs:			
Variable cash expenses	28.24	25.05	30.61
General farm overhead	3.53	4.39	4.82
Taxes and insurance	.73	.74	.74
Capital replacement	5.60	5.61	5.49
Allocated returns to owned inputs:			
Return to operating capital 2/	.38	.37	.53
Return to other nonland capital 3/	1.14	1.32	1.41
Land 4/	.07	.07	.08
Unpaid labor (.91 hr)	4.36	4.50	4.64
Total, economic costs	44.05	42.05	48.32
Residual returns to management and risk	6.41	12.89	-4.53

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 29--U.S. farrow-to-finish production costs, 140-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.3 lbs) 1/	2.31	2.33	1.73
Slaughter hogs (94.6 lbs)	47.82	47.00	40.22
Total	50.13	49.33	41.95
Cash expenses:			
Feed--			
Grain (354.5 lbs)	12.56	9.18	13.14
Protein supplements (80.4 lbs)	10.51	10.59	12.35
Pasture (.03 ac)	.13	.13	.19
Other--			
Veterinary and medicine	.60	.61	.63
Livestock hauling	.16	.15	.15
Marketing	.54	.56	.60
Bedding (16 lbs)	.19	.19	.19
Fuel, lube, and electricity	1.84	1.84	1.85
Machinery and building repairs	2.74	2.76	2.79
Hired labor (.12 hr)	.47	.52	.56
Manure credit	-.15	-.14	-.15
Total, variable cash expenses	29.59	26.39	32.30
General farm overhead	3.51	3.95	4.61
Taxes and insurance	.90	.92	.92
Interest	6.02	3.45	4.20
Total, fixed cash expenses	10.43	8.32	9.73
Total, cash expenses	40.02	34.71	42.03
Value of production less cash expenses	10.11	14.62	-.08
Capital replacement	6.85	6.86	6.78
Value of production less cash expenses and capital replacement	3.26	7.76	-6.86
Economic (full ownership) costs:			
Variable cash expenses	29.59	26.39	32.30
General farm overhead	3.51	3.95	4.61
Taxes and insurance	.90	.92	.92
Capital replacement	6.85	6.86	6.78
Allocated returns to owned inputs:			
Return to operating capital 2/	.40	.39	.56
Return to other nonland capital 3/	1.41	1.62	1.75
Land 4/	.28	.31	.38
Unpaid labor (2.23 hrs)	9.33	9.72	10.17
Total, economic costs	52.27	50.16	57.47
Residual returns to management and risk	-2.14	-.83	-15.52

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 30--U.S. farrow-to-finish production costs, 300-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.9 lbs) 1/	2.63	2.65	1.96
Slaughter hogs (94 lbs)	48.04	47.95	40.41
Total	50.67	50.60	42.37
Cash expenses:			
Feed--			
Grain (353.7 lbs)	12.24	8.92	12.74
Protein supplements (80.4 lbs)	10.51	10.59	12.36
Pasture (.02 ac)	.06	.06	.09
Other--			
Veterinary and medicine	.69	.71	.73
Livestock hauling	.21	.20	.21
Marketing	.41	.42	.45
Bedding (22 lbs)	.24	.24	.25
Fuel, lube, and electricity	1.53	1.48	1.49
Machinery and building repairs	2.48	2.50	2.53
Hired labor (.09 hr)	.40	.41	.44
Manure credit	-.17	-.16	-.17
Total, variable cash expenses	28.60	25.37	31.12
General farm overhead	3.55	4.05	4.66
Taxes and insurance	.77	.79	.79
Interest	6.08	3.54	4.24
Total, fixed cash expenses	10.40	8.38	9.69
Total, cash expenses	39.00	33.75	40.81
Value of production less cash expenses	11.67	16.85	1.56
Capital replacement	6.66	6.70	6.58
Value of production less cash expenses and capital replacement	5.01	10.15	-5.02
Economic (full ownership) costs:			
Variable cash expenses	28.60	25.37	31.12
General farm overhead	3.55	4.05	4.66
Taxes and insurance	.77	.79	.79
Capital replacement	6.66	6.70	6.58
Allocated returns to owned inputs:			
Return to operating capital 2/	.39	.37	.54
Return to other nonland capital 3/	1.30	1.50	1.62
Land 4/	.14	.14	.19
Unpaid labor (1.58 hrs)	6.52	6.80	7.19
Total, economic costs	47.93	45.72	52.69
Residual returns to management and risk	2.74	4.88	-10.32

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 31--U.S. farrow-to-finish production costs, 650-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.8 lbs) 1/	2.54	2.56	1.90
Slaughter hogs (94.2 lbs)	47.90	53.69	42.25
Total	50.44	56.25	44.15
Cash expenses:			
Feed--			
Grain (353.2 lbs)	12.20	8.89	12.68
Protein supplements (80.7 lbs)	10.39	10.48	12.25
Pasture (.01 ac)	.04	.04	.06
Other--			
Veterinary and medicine	.77	.78	.80
Livestock hauling	.13	.13	.13
Marketing	.40	.41	.44
Bedding (18 lbs)	.21	.21	.22
Fuel, lube, and electricity	1.80	1.76	1.77
Machinery and building repairs	2.35	2.36	2.40
Hired labor (.12 hr)	.51	.54	.57
Manure credit	-.17	-.16	-.18
Total, variable cash expenses	28.63	25.44	31.14
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.71	.73	.73
Interest	6.05	3.94	4.42
Total, fixed cash expenses	10.29	9.17	10.01
Total, cash expenses	38.92	34.61	41.15
Value of production less cash expenses	11.52	21.64	3.00
Capital replacement	5.79	5.83	5.75
Value of production less cash expenses and capital replacement	5.73	15.81	-2.75
Economic (full ownership) costs:			
Variable cash expenses	28.63	25.44	31.14
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.71	.73	.73
Capital replacement	5.79	5.83	5.75
Allocated returns to owned inputs:			
Return to operating capital 2/	.39	.37	.54
Return to other nonland capital 3/	1.13	1.30	1.40
Land 4/	.09	.09	.11
Unpaid labor (1.02 hrs)	4.17	4.34	4.60
Total, economic costs	44.44	42.60	49.13
Residual returns to management and risk	6.00	13.65	-4.98

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 32--U.S. farrow-to-finish production costs, 1,600-head operation,  
1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.6 lbs) 1/	2.46	2.49	1.85
Slaughter hogs (94.4 lbs)	48.00	53.80	42.33
Total	50.46	56.29	44.18
Cash expenses:			
Feed--			
Grain (345.8 lbs)	11.98	8.73	12.45
Protein supplements (85 lbs)	10.44	10.46	12.38
Pasture	.00	.00	.01
Other--			
Veterinary and medicine	.30	.31	.32
Livestock hauling	.11	.11	.11
Marketing	.38	.38	.41
Bedding (12 lbs)	.15	.15	.16
Fuel, lube, and electricity	1.51	1.49	1.50
Machinery and building repairs	2.40	2.42	2.45
Hired labor (.23 hr)	1.32	1.38	1.46
Manure credit	-.17	-.16	-.18
Total, variable cash expenses	28.42	25.27	31.07
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.80	.81	.80
Interest	6.06	3.94	4.42
Total, fixed cash expenses	10.39	9.25	10.08
Total, cash expenses	38.81	34.52	41.15
Value of production less cash expenses	11.65	21.77	3.03
Capital replacement	5.67	5.70	5.62
Value of production less cash expenses and capital replacement	5.98	16.07	-2.59
Economic (full ownership) costs:			
Variable cash expenses	28.42	25.27	31.07
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.80	.81	.80
Capital replacement	5.67	5.70	5.62
Allocated returns to owned inputs:			
Return to operating capital 2/	.38	.37	.54
Return to other nonland capital 3/	1.21	1.40	1.51
Land 4/	.01	.01	.01
Unpaid labor (.74 hr)	4.12	4.29	4.54
Total, economic costs	44.14	42.35	48.95
Residual returns to management and risk	6.32	13.94	-4.77

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 33--U.S. farrow-to-finish production costs, 3,000-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.4 lbs) 1/	2.36	2.38	1.77
Slaughter hogs (94.6 lbs)	48.10	53.91	42.43
Total	50.46	56.29	44.20
Cash expenses:			
Feed--			
Grain (348.1 lbs)	12.19	8.89	12.69
Protein supplements (79.9 lbs)	8.84	8.79	10.10
Other--			
Veterinary and medicine	.37	.38	.40
Livestock hauling	.07	.07	.07
Marketing	.22	.23	.24
Bedding (4 lbs)	.05	.05	.05
Fuel, lube, and electricity	1.58	1.59	1.61
Machinery and building repairs	2.30	2.31	2.37
Hired labor (.23 hr)	1.73	1.85	1.95
Manure credit	-.16	-.15	-.16
Total, variable cash expenses	27.19	24.01	29.32
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.66	.67	.66
Interest	6.06	3.94	4.42
Total, fixed cash expenses	10.25	9.11	9.94
Total, cash expenses	37.44	33.12	39.26
Value of production less cash expenses	13.02	23.17	4.94
Capital replacement	4.82	4.86	4.83
Value of production less cash expenses and capital replacement	8.20	18.31	.11
Economic (full ownership) costs:			
Variable cash expenses	27.19	24.01	29.32
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.66	.67	.66
Capital replacement	4.82	4.86	4.83
Allocated returns to owned inputs:			
Return to operating capital 2/	.37	.35	.51
Return to other nonland capital 3/	1.01	1.17	1.27
Land 4/	.01	.01	.01
Unpaid labor (.43 hr)	3.36	3.51	3.69
Total, economic costs	40.95	39.08	45.15
Residual returns to management and risk	9.51	17.21	-.95

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 34--U.S. farrow-to-finish production costs, 10,000-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.3 lbs) 1/	2.35	2.36	1.75
Slaughter hogs (94.7 lbs)	48.09	53.91	42.42
Total	50.44	56.27	44.17
Cash expenses:			
Feed--			
Grain (336.5 lbs)	11.98	8.74	12.46
Protein supplements (77.8 lbs)	8.25	8.21	9.44
Other--			
Veterinary and medicine	.66	.67	.69
Livestock hauling	.13	.13	.13
Marketing	.22	.23	.24
Bedding (2 lbs)	.04	.04	.04
Fuel, lube, and electricity	1.88	1.87	1.90
Machinery and building repairs	1.81	1.82	1.85
Hired labor (.33 hr)	2.70	2.76	2.92
Manure credit	-.31	-.29	-.32
Total, variable cash expenses	27.36	24.18	29.35
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.60	.60	.59
Interest	6.05	3.94	4.42
Total, fixed cash expenses	10.18	9.04	9.87
Total, cash expenses	37.54	33.22	39.22
Value of production less cash expenses	12.90	23.05	4.95
Capital replacement	4.21	4.24	4.14
Value of production less cash expenses and capital replacement	8.69	18.81	.81
Economic (full ownership) costs:			
Variable cash expenses	27.36	24.18	29.35
General farm overhead	3.53	4.50	4.86
Taxes and insurance	.60	.60	.59
Capital replacement	4.21	4.24	4.14
Allocated returns to owned inputs:			
Return to operating capital 2/	.37	.35	.51
Return to other nonland capital 3/	.89	1.03	1.10
Land 4/	.01	.01	.01
Unpaid labor (.13 hr)	1.02	1.07	1.12
Total, economic costs	37.99	35.98	41.68
Residual returns to management and risk	12.45	20.29	2.49

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 35--Farrow-to-finish production costs, all sizes of operation,  
North-Central, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (5.8 lbs) 1/	2.55	2.59	1.92
Slaughter hogs (94.2 lbs)	47.91	52.28	41.85
Total	50.46	54.87	43.77
Cash expenses:			
Feed--			
Grain (348.5 lbs)	11.90	8.66	12.32
Protein supplements (80.8 lbs)	9.82	9.83	11.40
Pasture (.01 ac)	.02	.02	.03
Other--			
Veterinary and medicine	.54	.55	.55
Livestock hauling	.14	.14	.14
Marketing	.35	.36	.38
Bedding (14 lbs)	.16	.16	.16
Fuel, lube, and electricity	1.64	1.61	1.62
Machinery and building repairs	2.38	2.39	2.42
Hired labor (.18 hr)	1.11	1.17	1.28
Manure credit	-.21	-.20	-.22
Total, variable cash expenses	27.85	24.69	30.08
General farm overhead	3.53	4.39	4.82
Taxes and insurance	.73	.75	.74
Interest	6.06	3.84	4.38
Total, fixed cash expenses	10.32	8.98	9.94
Total, cash expenses	38.17	33.67	40.02
Value of production less cash expenses	12.29	21.20	3.75
Capital replacement	5.72	5.75	5.63
Value of production less cash expenses and capital replacement	6.57	15.45	-1.88
Economic (full ownership) costs:			
Variable cash expenses	27.85	24.69	30.08
General farm overhead	3.53	4.39	4.82
Taxes and insurance	.73	.75	.74
Capital replacement	5.72	5.75	5.63
Allocated returns to owned inputs:			
Return to operating capital 2/	.38	.36	.52
Return to other nonland capital 3/	1.17	1.34	1.44
Land 4/	.05	.05	.07
Unpaid labor (.92 hr)	4.42	4.54	4.72
Total, economic costs	43.85	41.87	48.02
Residual returns to management and risk	6.61	13.00	-4.25

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 36--Farrow-to-finish production costs, all sizes of operation,  
Southeast, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (4.1 lbs) 1/	1.72	1.74	1.29
Slaughter hogs (95.9 lbs)	48.65	53.71	42.60
Total	50.37	55.45	43.89
Cash expenses:			
Feed--			
Grain (346 lbs)	14.09	10.26	14.64
Protein supplements (83.6 lbs)	10.29	10.31	12.15
Pasture (.01 ac)	.10	.09	.11
Other--			
Veterinary and medicine	.62	.64	.66
Livestock hauling	.06	.06	.06
Marketing	.36	.37	.39
Bedding (4 lbs)	.04	.04	.05
Fuel, lube, and electricity	1.84	1.92	1.95
Machinery and building repairs	2.01	2.01	2.05
Hired labor (.30 hr)	1.77	1.91	1.94
Total, variable cash expenses	31.18	27.61	34.00
General farm overhead	3.53	4.44	4.83
Taxes and insurance	.76	.72	.71
Interest	6.04	3.88	4.39
Total, fixed cash expenses	10.33	9.04	9.93
Total, cash expenses	41.51	36.65	43.93
Value of production less cash expenses	8.86	18.80	-.04
Capital replacement	4.65	4.68	4.60
Value of production less cash expenses and capital replacement	4.21	14.12	-4.64
Economic (full ownership) costs:			
Variable cash expenses	31.18	27.61	34.00
General farm overhead	3.53	4.44	4.83
Taxes and insurance	.76	.72	.71
Capital replacement	4.65	4.68	4.60
Allocated returns to owned inputs:			
Return to operating capital 2/	.42	.40	.59
Return to other nonland capital 3/	.98	1.13	1.22
Land 4/	.15	.17	.17
Unpaid labor (.84 hr)	3.91	4.16	4.13
Total, economic costs	45.58	43.31	50.25
Residual returns to management and risk	4.79	12.14	-6.36

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 37--U.S. feeder pig production costs, all sizes of operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (18.9 lbs) 1/	8.39	8.44	6.23
Feeder pigs (81 lbs)	76.77	81.50	57.31
Total	85.16	89.94	63.54
Cash expenses:			
Feed--			
Grain (427.7 lbs)	15.14	11.01	15.65
Protein supplements (117.2 lbs)	15.72	15.71	18.36
Pasture (.04 ac)	.13	.12	.17
Other--			
Veterinary and medicine	1.50	1.51	1.50
Livestock hauling	.20	.19	.19
Marketing	1.63	1.66	1.76
Bedding (32 lbs)	.37	.37	.37
Custom feed mixing	1.19	1.19	1.18
Fuel, lube, and electricity	6.42	6.36	6.33
Machinery and building repairs	4.70	4.72	4.76
Hired labor (.44 hr)	2.86	3.10	3.38
Manure credit	-.14	-.13	-.15
Total, variable cash expenses	49.72	45.81	53.50
General farm overhead	5.96	7.20	6.99
Taxes and insurance	1.88	1.89	1.84
Interest	10.22	6.30	6.35
Total, fixed cash expenses	18.06	15.39	15.18
Total, cash expenses	67.78	61.20	68.68
Value of production less cash expenses	17.38	28.74	-5.14
Capital replacement	11.68	11.76	11.38
Value of production less cash expenses and capital replacement	5.70	16.98	-16.52
Economic (full ownership) costs:			
Variable cash expenses	49.72	45.81	53.50
General farm overhead	5.96	7.20	6.99
Taxes and insurance	1.88	1.89	1.84
Capital replacement	11.68	11.76	11.38
Allocated returns to owned inputs:			
Return to operating capital 2/	.67	.67	.93
Return to other nonland capital 3/	2.62	3.03	3.17
Land 4/	.33	.34	.40
Unpaid labor (3.47 hrs)	16.62	17.23	17.76
Total, economic costs	89.48	87.93	95.97
Residual returns to management and risk	-4.32	2.01	-32.43

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 38--U.S. feeder pig production costs, 140-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (19.6 lbs) 1/	8.79	8.76	6.44
Feeder pigs (80.3 lbs)	73.34	71.08	54.75
Total	82.13	79.84	61.19
Cash expenses:			
Feed--			
Grain (469 lbs)	16.91	12.34	17.62
Protein supplements (119.7 lbs)	15.73	15.80	18.38
Pasture (.03 ac)	.48	.51	.67
Other--			
Veterinary and medicine	2.97	2.98	3.03
Marketing	1.60	1.70	1.87
Bedding	.35	.36	.38
Custom feed mixing	5.44	5.64	5.94
Fuel, lube, and electricity	5.82	5.80	5.85
Machinery and building repairs	5.75	5.81	5.91
Hired labor (.13 hr)	.46	.54	.58
Total, variable cash expenses	55.51	51.48	60.23
General farm overhead	5.75	6.39	6.73
Taxes and insurance	2.03	2.03	1.98
Interest	9.86	5.59	6.12
Total, fixed cash expenses	17.64	14.01	14.83
Total, cash expenses	73.15	65.49	75.06
Value of production less cash expenses	8.98	14.35	-13.87
Capital replacement	13.02	13.14	12.85
Value of production less cash expenses and capital replacement	-4.04	1.21	-26.72
Economic (full ownership) costs:			
Variable cash expenses	55.51	51.48	60.23
General farm overhead	5.75	6.39	6.73
Taxes and insurance	2.03	2.03	1.98
Capital replacement	13.02	13.14	12.85
Allocated returns to owned inputs:			
Return to operating capital 2/	.75	.75	1.04
Return to other nonland capital 3/	2.90	3.36	3.56
Land 4/	.56	.66	.77
Unpaid labor (7.64 hrs)	31.95	33.95	35.47
Total, economic costs	112.47	111.76	122.63
Residual returns to management and risk	-30.34	-31.92	-61.44

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 39--U.S. feeder pig production costs, 300-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (20.6 lbs) 1/	9.11	9.19	6.77
Feeder pigs (79.2 lbs)	75.32	68.91	53.76
Total	84.43	78.10	60.53
Cash expenses:			
Feed--			
Grain (469.5 lbs)	16.40	11.94	17.01
Protein supplements (119.4 lbs)	15.70	15.80	18.36
Pasture (.17 ac)	.28	.26	.42
Other--			
Veterinary and medicine	3.69	3.74	3.79
Livestock hauling	.41	.40	.40
Marketing	1.69	1.74	1.90
Bedding (76 lbs)	.82	.83	.85
Custom feed mixing	2.62	2.65	2.68
Fuel, lube, and electricity	10.45	10.29	10.29
Machinery and building repairs	5.81	5.87	6.01
Hired labor (.10 hr)	.33	.38	.45
Manure credit	-.16	-.15	-.16
Total, variable cash expenses	58.04	53.75	62.00
General farm overhead	5.91	6.25	6.66
Taxes and insurance	2.56	2.65	2.71
Interest	10.13	5.47	6.05
Total, fixed cash expenses	18.60	14.37	15.42
Total, cash expenses	76.64	68.12	77.42
Value of production less cash expenses	7.79	9.98	-16.89
Capital replacement	13.88	14.00	13.79
Value of production less cash expenses and capital replacement	-6.09	-4.02	-30.68
Economic (full ownership) costs:			
Variable cash expenses	58.04	53.75	62.00
General farm overhead	5.91	6.25	6.66
Taxes and insurance	2.56	2.65	2.71
Capital replacement	13.88	14.00	13.79
Allocated returns to owned inputs:			
Return to operating capital 2/	.78	.79	1.07
Return to other nonland capital 3/	3.19	3.70	3.95
Land 4/	1.22	1.25	1.59
Unpaid labor (5.72 hrs)	23.50	24.61	26.05
Total, economic costs	109.08	107.00	117.82
Residual returns to management and risk	-24.65	-28.90	-57.29

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 40--U.S. feeder pig production costs, 650-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (19.5 lbs) 1/	8.61	8.69	6.45
Feeder pigs (80.3 lbs)	76.53	83.83	57.39
Total	85.14	92.52	63.84
Cash expenses:			
Feed--			
Grain (439.5 lbs)	15.28	11.12	15.85
Protein supplements (123 lbs)	17.30	17.28	20.23
Pasture (.04 ac)	.13	.13	.18
Other--			
Veterinary and medicine	.42	.43	.44
Livestock hauling	.25	.24	.25
Marketing	3.02	3.07	3.28
Bedding (42 lbs)	.47	.47	.49
Fuel, lube, and electricity	5.47	5.47	5.51
Machinery and building repairs	4.88	4.92	5.00
Hired labor (.20 hr)	.84	.88	.93
Manure credit	-.17	-.16	-.17
Total, variable cash expenses	47.89	43.85	51.99
General farm overhead	5.96	7.40	7.02
Taxes and insurance	1.77	1.81	1.79
Interest	10.22	6.48	6.38
Total, fixed cash expenses	17.95	15.69	15.19
Total, cash expenses	65.84	59.54	67.18
Value of production less cash expenses	19.30	32.98	-3.34
Capital replacement	11.20	11.28	10.99
Value of production less cash expenses and capital replacement	8.10	21.70	-14.33
Economic (full ownership) costs:			
Variable cash expenses	47.89	43.85	51.99
General farm overhead	5.96	7.40	7.02
Taxes and insurance	1.77	1.81	1.79
Capital replacement	11.20	11.28	10.99
Allocated returns to owned inputs:			
Return to operating capital 2/	.65	.64	.90
Return to other nonland capital 3/	2.53	2.93	3.08
Land 4/	.32	.34	.43
Unpaid labor (4.44 hrs)	18.62	19.44	20.52
Total, economic costs	88.94	87.69	96.72
Residual returns to management and risk	-3.80	4.83	-32.88

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 41--U.S. feeder pig production costs, 1,600-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (19.5 lbs) 1/	8.61	8.68	6.44
Feeder pigs (80.4 lbs)	76.62	83.94	57.46
Total	85.23	92.62	63.90
Cash expenses:			
Feed--			
Grain (434.7 lbs)	15.17	11.04	15.72
Protein supplements (121.5 lbs)	16.75	16.73	19.66
Pasture (.01 ac)	.05	.05	.07
Other--			
Veterinary and medicine	.72	.73	.75
Livestock hauling	.20	.20	.20
Marketing	1.31	1.34	1.44
Bedding (16 lbs)	.18	.19	.19
Fuel, lube, and electricity	6.99	6.93	7.02
Machinery and building repairs	5.29	5.33	5.41
Hired labor (.18 hr)	.92	1.03	1.08
Manure credit	-.16	-.15	-.17
Total, variable cash expenses	47.42	43.42	51.37
General farm overhead	5.97	7.41	7.03
Taxes and insurance	2.13	2.15	2.12
Interest	10.23	6.48	6.39
Total, fixed cash expenses	18.33	16.04	15.54
Total, cash expenses	65.75	59.46	66.91
Value of production less cash expenses	19.48	33.16	-3.01
Capital replacement	13.19	13.28	13.07
Value of production less cash expenses and capital replacement	6.29	19.88	-16.08
Economic (full ownership) costs:			
Variable cash expenses	47.42	43.42	51.37
General farm overhead	5.97	7.41	7.03
Taxes and insurance	2.13	2.15	2.12
Capital replacement	13.19	13.28	13.07
Allocated returns to owned inputs:			
Return to operating capital 2/	.64	.64	.89
Return to other nonland capital 3/	2.96	3.42	3.63
Land 4/	.11	.12	.15
Unpaid labor (3.06 hrs)	17.64	18.41	19.40
Total, economic costs	90.06	88.85	97.66
Residual returns to management and risk	-4.83	3.77	-33.76

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 42--U.S. feeder pig production costs, 3,000-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (18.2 lbs) 1/	8.03	8.09	5.98
Feeder pigs (81.8 lbs)	77.83	85.29	58.41
Total	85.86	93.38	64.39
Cash expenses:			
Feed--			
Grain (410 lbs)	14.54	10.59	15.11
Protein supplements (114.6 lbs)	15.30	15.29	17.94
Pasture (.01 ac)	.04	.04	.06
Other--			
Veterinary and medicine	.98	1.00	1.02
Livestock hauling	.11	.11	.11
Marketing	1.22	1.25	1.34
Bedding (36 lbs)	.44	.43	.45
Fuel, lube, and electricity	5.15	5.10	5.18
Machinery and building repairs	4.06	4.09	4.15
Hired labor (.56 hr)	4.21	4.52	4.75
Manure credit	-.15	-.14	-.15
Total, variable cash expenses	45.90	42.28	49.96
General farm overhead	6.01	7.47	7.08
Taxes and insurance	1.59	1.59	1.55
Interest	10.30	6.54	6.44
Total, fixed cash expenses	17.90	15.60	15.07
Total, cash expenses	63.80	57.88	65.03
Value of production less cash expenses	22.06	35.50	-.64
Capital replacement	10.66	10.75	10.37
Value of production less cash expenses and capital replacement	11.40	24.75	-11.01
Economic (full ownership) costs:			
Variable cash expenses	45.90	42.28	49.96
General farm overhead	6.01	7.47	7.08
Taxes and insurance	1.59	1.59	1.55
Capital replacement	10.66	10.75	10.37
Allocated returns to owned inputs:			
Return to operating capital 2/	.62	.62	.86
Return to other nonland capital 3/	2.32	2.69	2.82
Land 4/	.07	.08	.09
Unpaid labor (1.69 hrs)	12.41	12.96	13.58
Total, economic costs	79.58	78.44	86.31
Residual returns to management and risk	6.28	14.94	-21.92

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 43--U.S. feeder pig production costs, 10,000-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (16.3 lbs) 1/	7.18	7.21	5.35
Feeder pigs (83.7 lbs)	79.63	87.28	59.74
Total	86.81	94.49	65.09
Cash expenses:			
Feed--			
Grain (367.4 lbs)	13.29	9.69	13.82
Protein supplements (102.6 lbs)	12.07	12.06	14.12
Other--			
Veterinary and medicine	2.06	2.11	2.17
Livestock hauling	.13	.13	.13
Marketing	.48	.50	.54
Custom feed mixing	2.50	2.57	2.67
Fuel, lube, and electricity	4.79	4.74	4.82
Machinery and building repairs	2.47	2.50	2.52
Hired labor (1.47 hrs)	11.59	12.17	12.67
Manure credit	-.13	-.12	-.13
Total, variable cash expenses	49.25	46.35	53.33
General farm overhead	6.08	7.56	7.16
Taxes and insurance	1.18	1.13	1.09
Interest	10.42	6.61	6.51
Total, fixed cash expenses	17.68	15.30	14.76
Total, cash expenses	66.93	61.65	68.09
Value of production less cash expenses	19.88	32.84	-3.00
Capital replacement	8.13	8.21	7.74
Value of production less cash expenses and capital replacement	11.75	24.63	-10.74
Economic (full ownership) costs:			
Variable cash expenses	49.25	46.35	53.33
General farm overhead	6.08	7.56	7.16
Taxes and insurance	1.18	1.13	1.09
Capital replacement	8.13	8.21	7.74
Allocated returns to owned inputs:			
Return to operating capital 2/	.66	.68	.92
Return to other nonland capital 3/	1.82	2.11	2.18
Land 4/	.01	.01	.01
Unpaid labor (.10 hr)	.79	.86	.88
Total, economic costs	67.92	66.91	73.31
Residual returns to management and risk	18.89	27.58	-8.22

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 44--Feeder pig production costs, all sizes of operation,  
North-Central, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (20.3 lbs) 1/	8.98	9.08	6.73
Feeder pigs (79.5 lbs)	75.51	80.22	56.43
Total	84.49	89.30	63.16
Cash expenses:			
Feed--			
Grain (439.8 lbs)	15.07	10.96	15.55
Protein supplements (120.6 lbs)	16.04	16.06	18.78
Pasture (.04 ac)	.05	.05	.07
Other--			
Veterinary and medicine	1.56	1.58	1.55
Livestock hauling	.23	.24	.24
Marketing	1.56	1.59	1.68
Bedding (36 lbs)	.41	.42	.42
Custom feed mixing	1.04	1.03	1.01
Fuel, lube, and electricity	6.67	6.57	6.54
Machinery and building repairs	4.66	4.68	4.71
Hired labor (.30 hr)	2.08	2.19	2.45
Manure credit	-.17	-.16	-.18
Total, variable cash expenses	49.20	45.21	52.82
General farm overhead	5.91	7.14	6.95
Taxes and insurance	1.87	1.92	1.88
Interest	10.14	6.25	6.32
Total, fixed cash expenses	17.92	15.31	15.15
Total, cash expenses	67.12	60.52	67.97
Value of production less cash expenses	17.37	28.78	-4.81
Capital replacement	11.70	11.77	11.40
Value of production less cash expenses and capital replacement	5.67	17.01	-16.21
Economic (full ownership) costs:			
Variable cash expenses	49.20	45.21	52.82
General farm overhead	5.91	7.14	6.95
Taxes and insurance	1.87	1.92	1.88
Capital replacement	11.70	11.77	11.40
Allocated returns to owned inputs:			
Return to operating capital 2/	.66	.66	.91
Return to other nonland capital 3/	2.63	3.04	3.18
Land 4/	.31	.32	.38
Unpaid labor (3.43 hrs)	16.62	17.12	17.84
Total, economic costs	88.90	87.18	95.36
Residual returns to management and risk	-4.41	2.12	-32.20

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 45--Feeder pig production costs, all sizes of operation,  
Southeast, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Cull sows (13.3 lbs) 1/	5.60	5.67	4.21
Feeder pigs (86.8 lbs)	82.75	87.08	60.83
Total	88.35	92.75	65.04
Cash expenses:			
Feed--			
Grain (379 lbs)	15.46	11.25	16.04
Protein supplements (103.6 lbs)	14.20	14.22	16.67
Pasture (.03 ac)	.49	.46	.56
Other--			
Veterinary and medicine	1.22	1.24	1.27
Livestock hauling	.02	.02	.02
Marketing	1.95	1.97	2.09
Bedding (14 lbs)	.16	.15	.16
Custom feed mixing	1.85	1.85	1.89
Fuel, lube, and electricity	5.22	5.42	5.49
Machinery and building repairs	4.89	4.91	4.96
Hired labor (1.00 hr)	6.54	7.07	7.14
Total, variable cash expenses	52.00	48.56	56.29
General farm overhead	6.18	7.42	7.15
Taxes and insurance	1.92	1.76	1.70
Interest	10.60	6.49	6.50
Total, fixed cash expenses	18.70	15.67	15.35
Total, cash expenses	70.70	64.23	71.64
Value of production less cash expenses	17.65	28.52	-6.60
Capital replacement	11.61	11.68	11.29
Value of production less cash expenses and capital replacement	6.04	16.84	-17.89
Economic (full ownership) costs:			
Variable cash expenses	52.00	48.56	56.29
General farm overhead	6.18	7.42	7.15
Taxes and insurance	1.92	1.76	1.70
Capital replacement	11.61	11.68	11.29
Allocated returns to owned inputs:			
Return to operating capital 2/	.70	.71	.97
Return to other nonland capital 3/	2.60	3.00	3.16
Land 4/	.43	.47	.49
Unpaid labor (3.68 hrs)	16.63	17.66	17.46
Total, economic costs	92.07	91.26	98.51
Residual returns to management and risk	-3.72	1.49	-33.47

1/ Quantities per cwt in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 46--U.S. feeder pig finishing production costs,  
all sizes of operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	50.49	55.19	44.34
Total	50.49	55.19	44.34
Cash expenses:			
Feeders--			
Pigs (22.7 lbs)	19.94	20.79	14.64
Feed--			
Grain (239 lbs)	8.37	6.10	8.71
Protein supplements (45.4 lbs)	5.58	5.61	6.54
Pasture	.01	.01	.01
Other--			
Veterinary and medicine	.47	.48	.49
Livestock hauling	.16	.16	.16
Marketing	.42	.43	.45
Bedding (8 lbs)	.10	.10	.10
Custom feed mixing	.06	.07	.07
Fuel, lube, and electricity	.99	.98	.97
Machinery and building repairs	1.58	1.60	1.62
Hired labor (.07 hr)	.41	.43	.46
Manure credit	-.14	-.13	-.15
Total, variable cash expenses	37.95	36.63	34.07
General farm overhead	3.53	4.42	4.88
Taxes and insurance	.46	.47	.47
Interest	6.06	3.86	4.43
Total, fixed cash expenses	10.05	8.75	9.78
Total, cash expenses	48.00	45.38	43.85
Value of production less cash expenses	2.49	9.81	.49
Capital replacement	2.97	2.99	3.03
Value of production less cash expenses and capital replacement	-.48	6.82	-2.54
Economic (full ownership) costs:			
Variable cash expenses	37.95	36.63	34.07
General farm overhead	3.53	4.42	4.88
Taxes and insurance	.46	.47	.47
Capital replacement	2.97	2.99	3.03
Allocated returns to owned inputs:			
Return to operating capital 1/	.34	.36	.39
Return to other nonland capital 2/	.61	.70	.79
Land 3/	.02	.02	.02
Unpaid labor (.29 hr)	1.33	1.39	1.42
Total, economic costs	47.21	46.98	45.07
Residual returns to management and risk	3.28	8.21	-.73

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 47--U.S. feeder pig finishing production costs, 140-head operation,  
1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	47.84	50.22	43.17
Total	47.84	50.22	43.17
Cash expenses:			
Feeders--			
Pigs (23.3 lbs)	20.78	18.00	13.29
Feed--			
Grain (241.3 lbs)	8.60	6.26	9.00
Protein supplements (44.7 lbs)	5.84	5.88	6.86
Pasture (.01 ac)	.10	.10	.14
Other--			
Veterinary and medicine	.75	.77	.78
Livestock hauling	.08	.08	.08
Marketing	.71	.72	.77
Bedding (18 lbs)	.19	.19	.20
Custom feed mixing	.77	.80	.99
Fuel, lube, and electricity	1.21	1.25	1.26
Machinery and building repairs	1.87	1.89	1.90
Hired labor (.04 hr)	.16	.17	.17
Manure credit	-.11	-.11	-.11
Total, variable cash expenses	40.95	36.00	35.33
General farm overhead	3.35	4.02	4.75
Taxes and insurance	.53	.55	.56
Interest	5.74	3.52	4.32
Total, fixed cash expenses	9.62	8.09	9.63
Total, cash expenses	50.57	44.09	44.96
Value of production less cash expenses	-2.73	6.13	-1.79
Capital replacement	3.78	3.81	3.87
Value of production less cash expenses and capital replacement	-6.51	2.32	-5.66
Economic (full ownership) costs:			
Variable cash expenses	40.95	36.00	35.33
General farm overhead	3.35	4.02	4.75
Taxes and insurance	.53	.55	.56
Capital replacement	3.78	3.81	3.87
Allocated returns to owned inputs:			
Return to operating capital 1/	.37	.35	.41
Return to other nonland capital 2/	.81	.93	1.04
Land 3/	.11	.13	.16
Unpaid labor (.78 hr)	3.01	3.16	3.35
Total, economic costs	52.91	48.95	49.47
Residual returns to management and risk	-5.07	1.27	-6.30

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 48--U.S. feeder pig finishing production costs, 300-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	50.17	49.34	42.29
Total	50.17	49.34	42.29
Cash expenses:			
Feeders--			
Pigs (22.6 lbs)	20.15	17.92	14.00
Feed--			
Grain (241.8 lbs)	8.39	6.11	8.74
Protein supplements (44.6 lbs)	5.84	5.88	6.86
Pasture	.02	.02	.04
Other--			
Veterinary and medicine	.50	.51	.53
Livestock hauling	.26	.25	.26
Marketing	.48	.49	.52
Bedding (8 lb)	.09	.09	.10
Fuel, lube, and electricity	1.13	1.08	1.06
Machinery and building repairs	1.71	1.72	1.74
Hired labor (.11 hr)	.48	.50	.53
Manure credit	-.13	-.12	-.13
Total, variable cash expenses	38.92	34.45	34.25
General farm overhead	3.51	3.95	4.65
Taxes and insurance	.48	.50	.50
Interest	6.02	3.45	4.23
Total, fixed cash expenses	10.01	7.90	9.38
Total, cash expenses	48.93	42.35	43.63
Value of production less cash expenses	1.24	6.99	-1.34
Capital replacement	3.01	3.02	3.07
Value of production less cash expenses and capital replacement	-1.77	3.97	-4.41
Economic (full ownership) costs:			
Variable cash expenses	38.92	34.45	34.25
General farm overhead	3.51	3.95	4.65
Taxes and insurance	.48	.50	.50
Capital replacement	3.01	3.02	3.07
Allocated returns to owned inputs:			
Return to operating capital 1/	.35	.34	.39
Return to other nonland capital 2/	.61	.70	.79
Land 3/	.04	.04	.05
Unpaid labor (.43 hr)	1.77	1.84	1.95
Total, economic costs	48.69	44.84	45.65
Residual returns to management and risk	1.48	4.50	-3.36

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 49--U.S. feeder pig finishing production costs, 650-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	50.83	56.38	44.62
Total	50.83	56.38	44.62
Cash expenses:			
Feeders--			
Pigs (22.4 lbs)	19.64	21.17	14.67
Feed--			
Grain (242 lbs)	8.38	6.11	8.71
Protein supplements (44.7 lbs)	5.77	5.81	6.77
Other--			
Veterinary and medicine	.44	.45	.46
Livestock hauling	.09	.09	.09
Marketing	.42	.43	.46
Bedding (14 lbs)	.16	.16	.16
Fuel, lube, and electricity	1.12	1.08	1.08
Machinery and building repairs	1.45	1.46	1.49
Hired labor (.07 hr)	.32	.33	.35
Manure credit	-.13	-.12	-.14
Total, variable cash expenses	37.66	36.97	34.10
General farm overhead	3.56	4.51	4.91
Taxes and insurance	.39	.41	.41
Interest	6.10	3.95	4.46
Total, fixed cash expenses	10.05	8.87	9.78
Total, cash expenses	47.71	45.84	43.88
Value of production less cash expenses	3.12	10.54	.74
Capital replacement	2.47	2.49	2.54
Value of production less cash expenses and capital replacement	.65	8.05	-1.80
Economic (full ownership) costs:			
Variable cash expenses	37.66	36.97	34.10
General farm overhead	3.56	4.51	4.91
Taxes and insurance	.39	.41	.41
Capital replacement	2.47	2.49	2.54
Allocated returns to owned inputs:			
Return to operating capital 1/	.34	.36	.39
Return to other nonland capital 2/	.49	.57	.64
Land 3/	.01	.01	.01
Unpaid labor (.37 hr)	1.44	1.51	1.59
Total, economic costs	46.36	46.83	44.59
Residual returns to management and risk	4.47	9.55	.03

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 50--U.S. feeder pig finishing production costs, 1,600-head operation, 1986-88

Item	1986	1987	1988
	<u>Dollars per cwt</u>		
Gross value of production:			
Slaughter hogs (100 lbs)	50.85	56.99	44.84
Total	50.85	56.99	44.84
Cash expenses:			
Feeders--			
Pigs (22.5 lbs)	19.68	21.58	14.77
Feed--			
Grain (240.8 lbs)	8.37	6.10	8.69
Protein supplements (44.9 lbs)	5.71	5.76	6.73
Other--			
Veterinary and medicine	.46	.47	.48
Livestock hauling	.19	.19	.19
Marketing	.41	.42	.45
Bedding (6 lbs)	.08	.08	.09
Fuel, lube, and electricity	1.02	1.02	1.02
Machinery and building repairs	1.67	1.68	1.70
Hired labor (.08 hr)	.49	.51	.54
Manure credit	-.13	-.12	-.13
Total, variable cash expenses	37.95	37.69	34.53
General farm overhead	3.56	4.56	4.93
Taxes and insurance	.51	.52	.53
Interest	6.10	3.99	4.48
Total, fixed cash expenses	10.17	9.07	9.94
Total, cash expenses	48.12	46.76	44.47
Value of production less cash expenses	2.73	10.23	.37
Capital replacement	3.46	3.47	3.51
Value of production less cash expenses and capital replacement	-.73	6.76	-3.14
Economic (full ownership) costs:			
Variable cash expenses	37.95	37.69	34.53
General farm overhead	3.56	4.56	4.93
Taxes and insurance	.51	.52	.53
Capital replacement	3.46	3.47	3.51
Allocated returns to owned inputs:			
Return to operating capital 1/	.34	.37	.40
Return to other nonland capital 2/	.70	.81	.90
Land 3/	.01	.01	.01
Unpaid labor (.19 hr)	1.00	1.04	1.10
Total, economic costs	47.53	48.47	45.91
Residual returns to management and risk	3.32	8.52	-1.07

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 51--U.S. feeder pig finishing production costs, 3,000-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	50.84	56.97	44.82
Total	50.84	56.97	44.82
Cash expenses:			
Feeders--			
Pigs (22.8 lbs)	19.90	21.83	14.95
Feed--			
Grain (235.8 lbs)	8.30	6.06	8.64
Protein supplements (47.6 lbs)	5.32	5.33	6.29
Other--			
Veterinary and medicine	.33	.34	.35
Livestock hauling	.18	.18	.18
Marketing	.41	.41	.44
Bedding (4 lbs)	.06	.06	.06
Fuel, lube, and electricity	.80	.81	.82
Machinery and building repairs	1.53	1.54	1.58
Hired labor (.04 hr)	.33	.35	.37
Manure credit	-.12	-.11	-.12
Total, variable cash expenses	37.04	36.80	33.56
General farm overhead	3.56	4.56	4.93
Taxes and insurance	.44	.45	.46
Interest	6.10	3.99	4.48
Total, fixed cash expenses	10.10	9.00	9.87
Total, cash expenses	47.14	45.80	43.43
Value of production less cash expenses	3.70	11.17	1.39
Capital replacement	2.77	2.80	2.85
Value of production less cash expenses and capital replacement	.93	8.37	-1.46
Economic (full ownership) costs:			
Variable cash expenses	37.04	36.80	33.56
General farm overhead	3.56	4.56	4.93
Taxes and insurance	.44	.45	.46
Capital replacement	2.77	2.80	2.85
Allocated returns to owned inputs:			
Return to operating capital 1/	.33	.36	.39
Return to other nonland capital 2/	.59	.68	.76
Land 3/	.00	.00	.00
Unpaid labor (.14 hr)	1.02	1.07	1.12
Total, economic costs	45.75	46.72	44.07
Residual returns to management and risk	5.09	10.25	.75

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 52--U.S. feeder pig finishing production costs, 10,000-head operation, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	50.82	56.95	44.81
Total	50.82	56.95	44.81
Cash expenses:			
Feeders--			
Pigs (23.1 lbs)	20.20	22.18	15.18
Feed--			
Grain (232.1 lbs)	8.31	6.07	8.66
Protein supplements (45.9 lbs)	4.96	4.95	5.78
Other--			
Veterinary and medicine	.50	.51	.52
Livestock hauling	.14	.14	.15
Marketing	.22	.23	.24
Bedding (2 lbs)	.03	.03	.03
Fuel, lube, and electricity	.66	.67	.67
Machinery and building repairs	1.42	1.44	1.46
Hired labor (.08 hr)	.60	.64	.66
Manure credit	-.23	-.21	-.23
Total, variable cash expenses	36.81	36.65	33.12
General farm overhead	3.56	4.56	4.93
Taxes and insurance	.41	.42	.43
Interest	6.10	3.99	4.48
Total, fixed cash expenses	10.07	8.97	9.84
Total, cash expenses	46.88	45.62	42.96
Value of production less cash expenses	3.94	11.33	1.85
Capital replacement	2.63	2.66	2.71
Value of production less cash expenses and capital replacement	1.31	8.67	-.86
Economic (full ownership) costs:			
Variable cash expenses	36.81	36.65	33.12
General farm overhead	3.56	4.56	4.93
Taxes and insurance	.41	.42	.43
Capital replacement	2.63	2.66	2.71
Allocated returns to owned inputs:			
Return to operating capital 1/	.33	.36	.38
Return to other nonland capital 2/	.54	.63	.71
Land 3/	.01	.01	.01
Unpaid labor (.09 hr)	.65	.67	.70
Total, economic costs	44.94	45.96	42.99
Residual returns to management and risk	5.88	10.99	1.82

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 53--Feeder pig finishing production costs, all sizes of operation,  
North-Central, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	50.49	55.37	44.42
Total	50.49	55.37	44.42
Cash expenses:			
Feeders--			
Pigs (22.1 lbs)	19.52	20.35	14.27
Feed--			
Grain (239.4 lbs)	8.17	5.95	8.46
Protein supplements (45.4 lbs)	5.58	5.61	6.54
Other--			
Veterinary and medicine	.48	.49	.50
Livestock hauling	.17	.17	.17
Marketing	.43	.44	.46
Bedding (10 lbs)	.11	.11	.11
Fuel, lube, and electricity	1.00	.97	.95
Machinery and building repairs	1.58	1.59	1.61
Hired labor (.07 hr)	.39	.41	.43
Manure credit	-.16	-.15	-.17
Total, variable cash expenses	37.27	35.94	33.33
General farm overhead	3.53	4.43	4.89
Taxes and insurance	.45	.46	.46
Interest	6.06	3.88	4.44
Total, fixed cash expenses	10.04	8.77	9.79
Total, cash expenses	47.31	44.71	43.12
Value of production less cash expenses	3.18	10.66	1.30
Capital replacement	2.94	2.96	2.99
Value of production less cash expenses and capital replacement	.24	7.70	-1.69
Economic (full ownership) costs:			
Variable cash expenses	37.27	35.94	33.33
General farm overhead	3.53	4.43	4.89
Taxes and insurance	.45	.46	.46
Capital replacement	2.94	2.96	2.99
Allocated returns to owned inputs:			
Return to operating capital 1/	.34	.35	.38
Return to other nonland capital 2/	.61	.70	.78
Land 3/	.01	.01	.01
Unpaid labor (.29 hr)	1.32	1.37	1.41
Total, economic costs	46.47	46.22	44.25
Residual returns to management and risk	4.02	9.15	.17

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 54--Feeder pig finishing production costs, all sizes of operation,  
Southeast, 1986-88

Item	1986	1987	1988
<u>Dollars per cwt</u>			
Gross value of production:			
Slaughter hogs (100 lbs)	50.51	54.19	43.91
Total	50.51	54.19	43.91
Cash expenses:			
Feeders--			
Pigs (25.7 lbs)	22.57	23.37	16.60
Feed--			
Grain (236.8 lbs)	9.65	7.02	10.02
Protein supplements (45.5 lbs)	5.61	5.62	6.55
Pasture	.09	.08	.09
Other--			
Veterinary and medicine	.41	.42	.43
Livestock hauling	.09	.09	.09
Marketing	.38	.38	.41
Bedding (2 lbs)	.02	.02	.02
Custom feed mixing	.47	.45	.46
Fuel, lube, and electricity	.93	1.04	1.04
Machinery and building repairs	1.62	1.63	1.66
Hired labor (.09 hr)	.53	.58	.58
Total, variable cash expenses	42.37	40.70	37.95
General farm overhead	3.54	4.34	4.83
Taxes and insurance	.50	.52	.52
Interest	6.06	3.79	4.39
Total, fixed cash expenses	10.10	8.65	9.74
Total, cash expenses	52.47	49.35	47.69
Value of production less cash expenses	-1.96	4.84	-3.78
Capital replacement	3.16	3.17	3.22
Value of production less cash expenses and capital replacement	-5.12	1.67	-7.00
Economic (full ownership) costs:			
Variable cash expenses	42.37	40.70	37.95
General farm overhead	3.54	4.34	4.83
Taxes and insurance	.50	.52	.52
Capital replacement	3.16	3.17	3.22
Allocated returns to owned inputs:			
Return to operating capital 1/	.38	.40	.44
Return to other nonland capital 2/	.62	.71	.80
Land 3/	.08	.08	.09
Unpaid labor (.32 hr)	1.41	1.49	1.47
Total, economic costs	52.06	51.41	49.32
Residual returns to management and risk	-1.55	2.78	-5.41

1/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 2/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 3/ Value of land multiplied by longrun real rate of return to production assets in farm sector.



Table 55--U.S. sheep production costs, all sizes of operation, 1986-88

Item	1986	1987	1988
<u>Dollars per ewe</u>			
Gross value of production:			
Slaughter lambs (31.9 lbs) 1/	20.84	22.89	16.33
Feeder lambs (26.6 lbs)	18.76	22.04	17.32
Cull Ewes (29.1 lbs)	5.97	5.76	6.06
Wool (10 lbs)	7.34	10.05	15.17
Wool incentive payment	11.78	11.94	11.79
Unshorn lamb payment	2.40	1.92	.86
Total	67.09	74.60	67.53
Cash expenses:			
Feed--			
Grain (.74 bu)	1.60	1.35	1.92
Protein supplements (.38 cwt)	3.68	3.68	3.96
Salt and minerals (.07 cwt)	.40	.40	.40
Hay (.10 ton)	2.93	2.85	4.04
Pasture	3.29	2.89	3.12
Public grazing	.68	.67	.77
Crop residue	.05	.05	.05
Other--			
Veterinary and medicine	1.08	1.10	1.13
Livestock hauling	1.25	1.23	1.27
Marketing	.29	.30	.32
Ram death loss	.27	.31	.25
Shearing and tagging	1.30	1.28	1.36
Fuel, lube, and electricity	1.12	1.17	1.19
Machinery and building repairs	2.32	2.35	2.37
Hired labor (1.42 hrs)	6.78	6.76	7.03
Miscellaneous	1.15	1.17	1.25
Total, variable cash expenses	28.19	27.56	30.43
General farm overhead	3.35	4.48	3.38
Taxes and insurance	2.42	2.66	2.83
Interest	7.38	6.71	6.08
Total, fixed cash expenses	13.15	13.85	12.29
Total, cash expenses	41.34	41.41	42.72
Value of production less cash expenses	25.75	33.19	24.81
Capital replacement	7.55	7.87	8.06
Value of production less cash expenses and capital replacement	18.20	25.32	16.75
Economic (full ownership) costs:			
Variable cash expenses	28.19	27.56	30.43
General farm overhead	3.35	4.48	3.38
Taxes and insurance	2.42	2.66	2.83
Capital replacement	7.55	7.87	8.06
Allocated returns to owned inputs:			
Return to operating capital 2/	.76	.81	1.05
Return to other nonland capital 3/	2.86	3.55	4.09
Land 4/	5.84	6.12	6.51
Unpaid labor (2.10 hrs)	8.13	7.96	8.47
Total, economic costs	59.10	61.01	64.82
Residual returns to management and risk	7.99	13.59	2.71

1/ Quantities per ewe in parentheses are for the latest year and will vary for earlier years. 2/ Variable expense items multiplied by part of year used and 6-month U.S. Treasury bill rate. 3/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 4/ Value of land multiplied by longrun real rate of return to production assets in farm sector.

Table 56--U.S. milk production costs, all sizes of operation, per cwt, 1972-85

Item	1972	1973	1974	1975	1976	1977	1978
<u>Dollars</u>							
Gross value of production:							
Milk	6.07	7.13	8.33	8.58	9.57	9.62	10.49
Cull cows	.79	1.03	.79	.65	.75	.74	1.06
Total	6.86	8.16	9.12	9.23	10.32	10.36	11.55
Cash expenses:							
Feed--							
Concentrates	1.51	2.17	2.72	2.71	2.71	2.66	2.68
By-products							
Hay	.44	.57	.70	.73	.79	.69	.64
Silage and haylage	.31	.40	.49	.51	.56	.48	.44
Pasture and other forage	.02	.03	.04	.04	.04	.03	.03
Other--							
Milk hauling and marketing	.31	.32	.33	.31	.31	.32	.33
Artificial insemination	.05	.05	.06	.07	.08	.08	.08
Veterinary and medicine	.12	.13	.14	.16	.17	.17	.17
Livestock hauling	.01	.01	.02	.01	.01	.01	.01
Fuel, lube, and electricity	.12	.13	.17	.19	.19	.20	.21
Machinery and building repairs	.20	.22	.26	.30	.28	.27	.28
Hired labor	.45	.50	.56	.60	.62	.65	.69
DHIA fees	.02	.02	.03	.03	.03	.04	.04
Dairy supplies	.09	.10	.12	.14	.14	.14	.15
Dairy assessment	.00	.00	.00	.00			
Total, variable cash expenses	3.65	4.65	5.64	5.80	5.93	5.74	5.75
General farm overhead	.09	.12	.16	.19	.23	.24	.29
Taxes and insurance	.10	.12	.15	.14	.16	.18	.21
Interest	.41	.52	.65	.68	.76	.74	.83
Total, fixed cash expenses	.60	.76	.96	1.01	1.15	1.16	1.33
Total, cash expenses	4.25	5.41	6.60	6.81	7.08	6.90	7.08
Value of production less cash expenses	2.61	2.75	2.52	2.42	3.24	3.46	4.47
Capital replacement	.73	.86	.98	.87	.92	.96	1.14
Value of production less cash expenses and capital replacement	1.88	1.89	1.54	1.55	2.32	2.50	3.33
Economic (full ownership) costs:							
Variable cash expenses	3.65	4.65	5.64	5.80	5.93	5.74	5.75
General farm overhead	.09	.12	.16	.19	.23	.24	.29
Taxes and insurance	.10	.12	.15	.14	.16	.18	.21
Capital replacement	.73	.86	.98	.87	.92	.96	1.14
Allocated returns to owned inputs:							
Operating capital	.06	.10	.11	.08	.06	.06	.09
Other nonland capital	.33	.40	.51	.48	.51	.51	.58
Land	.22	.23	.25	.17	.18	.20	.21
Unpaid labor	.80	.88	.99	1.06	1.10	1.15	1.22
Total, economic costs	5.98	7.36	8.79	8.79	9.09	9.04	9.49
Residual returns to management and risk	.88	.80	.33	.44	1.23	1.32	2.06

Continued--

Table 56--U.S. milk production costs, United States, per cwt, 1972-85--Continued

Item	1979	1980	1981	1982	1983	1984	1985
<u>Dollars</u>							
Gross value:							
Milk	11.93	12.95	13.69	13.52	13.50	13.38	12.70
Cull cows	1.49	1.38	1.25	1.14	1.09	1.07	1.06
Total	13.42	14.33	14.94	14.66	14.59	14.45	13.76
Cash expenses:							
Feed--							
Concentrates	3.02	3.35	3.45	3.28	3.43	3.47	3.35
By-products							
Hay	.74	.86	.80	.86	.85	.82	1.10
Silage and haylage	.52	.61	.56	.54	.56	.58	.58
Pasture and other	.04	.04	.04	.04	.04	.04	.06
Other--							
Milk hauling and marketing	.38	.43	.45	.45	.44	.45	.58
Artificial insemination	.09	.10	.11	.12	.12	.12	.12
Veterinary and medicine	.18	.19	.20	.20	.21	.22	.20
Livestock hauling	.02	.02	.02	.02	.02	.02	.03
Fuel, lube and electricity	.27	.38	.40	.40	.37	.33	.32
Machinery and building repairs	.30	.33	.35	.37	.37	.37	.41
Hired labor	.74	.77	.83	.87	.85	.91	.92
DHIA fees	.04	.04	.05	.05	.05	.05	.06
Dairy supplies	.17	.18	.19	.19	.19	.19	.21
Dairy assessment	.00	.00	.00	.00	.48	.50	.13
Total, variable cash expenses	6.51	7.30	7.45	7.39	7.98	8.07	8.28
General farm overhead	.38	.46	.54	.60	.50	.60	.53
Taxes and insurance	.29	.34	.37	.35	.36	.34	.37
Interest	1.08	1.29	1.52	1.56	1.55	1.63	1.41
Total, fixed cash expenses	1.75	2.09	2.43	2.51	2.41	2.57	2.31
Total, cash expenses	8.26	9.39	9.88	9.90	10.39	10.64	10.59
Value of production less cash expenses	5.16	4.94	5.06	4.76	4.20	3.81	3.17
Capital replacement	1.47	1.61	1.64	1.57	1.58	1.56	1.70
Value of production less cash expenses and capital replacement	3.69	3.33	3.42	3.19	2.62	2.25	1.47
Economic (full ownership) costs:							
Variable cash expenses	6.51	7.30	7.45	7.39	7.98	8.07	8.28
General farm overhead	.38	.46	.54	.60	.50	.60	.53
Taxes and insurance	.29	.34	.37	.35	.36	.34	.37
Capital replacement	1.47	1.61	1.64	1.57	1.58	1.56	1.70
Allocated returns to owned inputs:							
Operating capital	.12	.13	.15	.12	.12	.12	.08
Other nonland capital	.75	.80	.77	.71	.64	.49	.55
Land	.23	.26	.26	.25	.24	.19	.18
Unpaid labor	1.32	1.37	1.46	1.51	1.49	1.58	.55
Total, economic costs	11.07	12.27	12.64	12.50	12.91	12.95	12.24
Residual returns to management and risk	2.35	2.06	2.30	2.16	1.68	1.50	1.52



Table 57--U.S. fed cattle production costs, all sizes of operation, 1972-85

Item	1972	1973	1974	1975	1976	1977	1978
<u>Dollars per cwt</u>							
Gross value of production:							
Fed beef	35.76	44.20	38.97	41.79	38.97	40.18	52.40
Cash expenses:							
Feeders--							
Feeder cattle	22.58	28.93	20.60	18.41	21.48	21.92	27.84
Feed--							
Haylage	.03	.04	.06	.06	.07	.06	.05
Silage	.62	.77	1.04	1.07	1.22	1.08	.94
Dry grain & concentrates	6.82	10.90	16.65	15.41	14.33	10.99	9.36
Protein supplements	1.33	2.90	2.15	1.76	1.76	2.15	1.95
Legume hay	.39	.49	.66	.68	.78	.69	.60
Other roughages	.13	.16	.21	.22	.25	.22	.20
Pasture	.00	.00	.00	.00	.00	.00	.00
Crop residue	.00	.00	.00	.00	.00	.00	.00
Total feed costs	9.33	15.26	20.76	19.20	18.41	15.19	13.10
Other--							
Veterinary and medicine	.29	.31	.34	.37	.39	.38	.41
Livestock hauling	.10	.11	.12	.13	.13	.13	.14
Marketing	.05	.06	.06	.07	.07	.07	.08
Bedding	.03	.03	.04	.04	.04	.04	.04
Fuel, lube, and electricity	.21	.22	.30	.33	.35	.38	.40
Machinery and building repairs	.25	.26	.36	.40	.43	.46	.50
Hired labor	.28	.30	.35	.37	.41	.44	.47
Miscellaneous	.29	.31	.38	.45	.47	.50	.53
Manure credit	-.07	-.07	-.07	-.07	-.07	-.07	-.07
Total, variable cash expenses	33.33	45.72	43.24	39.71	42.11	39.44	43.44
General farm overhead	.24	.59	.50	.45	.48	.62	.60
Taxes and insurance	.12	.15	.14	.15	.14	.14	.17
Hired management	.07	.09	.08	.08	.08	.08	.08
Interest	2.07	2.56	2.26	2.42	2.26	2.33	3.12
Total, fixed cash expenses	2.51	3.39	2.97	3.10	2.95	3.17	3.97
Total, cash expenses	35.83	49.11	46.21	42.81	45.06	42.61	47.41
Value of production less cash expenses	-.07	-4.91	-7.24	-1.02	-6.09	-2.43	4.99
Capital replacement	.93	.98	1.08	1.17	1.23	1.21	1.34
Value of production less cash expenses and capital replacement	-1.00	-5.89	-8.31	-2.19	-7.32	-3.64	3.65
Economic (full ownership) costs:							
Variable cash expenses	33.33	45.72	43.24	39.71	42.11	39.44	43.44
General farm overhead	.24	.59	.50	.45	.48	.62	.60
Taxes and insurance	.12	.15	.14	.15	.14	.14	.17
Capital replacement	.93	.98	1.08	1.17	1.23	1.21	1.34
Hired management	.07	.09	.08	.08	.08	.08	.08
Allocated returns to owned inputs:							
Return to operating capital	.31	.66	.69	.49	.45	.44	.67
Return to other nonland capital	.38	.40	.44	.48	.50	.49	.49
Land	.03	.04	.05	.06	.07	.08	.08
Unpaid labor	.63	.66	.73	.80	.84	.82	.90
Total, economic costs	36.05	49.29	46.94	43.38	45.89	43.32	47.77
Residual returns to management and risk	-.29	-5.09	-7.97	-1.59	-6.92	-3.14	4.63

Continued--

Table 57--U.S. fed cattle production costs, all sizes of operation, 1972-85--Continued

Item	1979	1980	1981	1982	1983	1984	1985
<u>Dollars per cwt</u>							
Gross value of production:							
Fed beef	67.85	66.20	63.41	63.62	62.12	64.95	59.49
=====							
Cash expenses:							
Feeders--							
Feeder cattle	44.67	47.33	42.90	39.05	37.62	38.53	38.90
Feed--							
Haylage	.05	.05	.06	.06	.07	.06	.05
Silage	.86	.96	1.22	.94	.85	.94	.92
Dry grain & concentrates	10.61	12.13	13.51	10.98	13.60	14.00	11.54
Protein supplements	2.12	2.22	2.38	2.25	2.37	2.00	2.07
Legume hay	.72	.79	.98	.96	1.04	1.25	1.02
Other roughages	.23	.27	.39	.41	.43	.64	.55
Pasture	.00	.00	.00	.00	.00	.00	.00
Crop residue	.00	.00	.00	.00	.00	.00	.00
Total feed costs	14.59	16.42	18.54	15.60	18.36	18.89	16.15
Other--							
Veterinary and medicine	.44	.47	.51	.49	.51	.51	.52
Livestock hauling	.12	.15	.17	.16	.15	.14	.15
Marketing	.08	.08	.08	.08	.07	.06	.06
Bedding	.04	.04	.06	.05	.05	.04	.05
Fuel, lube, and electricity	.49	.67	.76	.72	.67	.51	.48
Machinery and building repairs	.49	.53	.57	.56	.58	.51	.55
Hired labor	.52	.56	.60	.63	.64	.75	.76
Miscellaneous	.60	.75	.84	.93	.97	1.01	1.00
Manure credit	-.08	-.10	-.11	-.11	-.10	-.08	-.08
Total, variable cash expenses	61.96	66.90	64.92	58.16	59.52	60.87	58.54
General farm overhead	.76	.90	.93	.99	.98	1.05	.93
Taxes and insurance	.16	.17	.17	.18	.18	.16	.16
Hired management	.10	.11	.12	.13	.14	.11	.11
Interest	4.32	4.69	5.08	5.40	5.01	4.81	4.28
Total, fixed cash expenses	5.34	5.87	6.30	6.70	6.31	6.13	5.48
Total, cash expenses	67.30	72.77	71.22	64.86	65.83	67.00	64.02
Value of production less cash expenses	.55	-6.57	-7.81	-1.24	-3.71	-2.05	-4.53
Capital replacement	1.57	1.12	1.23	1.19	1.21	1.07	1.11
Value of production less cash expenses and capital replacement	-1.02	-7.69	-9.04	-2.43	-4.92	-3.12	-5.64
=====							
Economic (full ownership) costs:							
Variable cash expenses	61.96	66.90	64.92	58.16	59.52	60.87	58.54
General farm overhead	.76	.90	.93	.99	.98	1.05	.93
Taxes and insurance	.16	.17	.17	.18	.18	.16	.16
Capital replacement	1.57	1.12	1.23	1.19	1.21	1.07	1.11
Hired management	.10	.11	.12	.13	.14	.11	.11
Allocated returns to owned inputs:							
Return to operating capital	1.26	1.49	1.81	1.31	1.06	1.21	.91
Return to other nonland capital	.42	.41	.38	.34	.31	.23	.43
Land	.10	.11	.12	.12	.11	.08	.07
Unpaid labor	.81	.58	.60	.55	.52	.47	1.39
Total, economic costs	67.14	71.79	70.28	62.96	64.02	65.26	63.65
Residual returns to management and risk	.71	-5.59	-6.87	.66	-1.90	-.31	-4.16

Table 58--U.S. cow-calf production costs, all sizes of operation, 1972-85

Item	1972	1973	1974	1975	1976	1977	1978
<u>Dollars per cow</u>							
Gross value of production:							
Steer calves	44.78	57.51	40.97	36.68	39.52	43.46	77.16
Heifer calves	26.50	34.04	24.25	21.71	23.38	25.72	45.66
Yearling steers	29.06	37.32	26.59	23.80	34.42	28.20	48.34
Yearling heifers	18.25	23.44	16.70	14.95	21.62	17.71	30.36
Cull cows	21.80	22.11	18.24	21.89	15.79	31.82	43.03
Total	140.39	174.42	126.75	119.03	134.73	146.91	244.55
=====							
Cash expenses:							
Feed--							
Grain	3.44	5.56	8.59	7.94	7.32	5.97	6.56
Silage	1.34	2.16	3.34	3.09	2.85	2.32	2.20
Protein supplements	4.25	9.24	6.81	5.58	5.58	6.84	9.21
Salt and minerals	1.52	1.63	1.83	2.07	2.25	2.55	2.60
Hay	27.13	31.00	36.28	45.38	47.21	35.03	33.05
Pasture	24.61	28.26	29.15	29.18	29.84	29.66	30.84
Public grazing	.63	.73	.93	.93	1.37	1.37	1.12
Crop residue (purchased)	.06	.06	.06	.06	.06	.07	.07
Total feed costs	62.98	78.64	86.99	94.23	96.48	83.81	85.65
Other--							
Veterinary and medicine	3.85	4.01	3.82	3.98	3.79	3.94	4.45
Livestock hauling	.95	1.04	.95	1.03	.94	1.02	1.07
Marketing	2.48	2.63	2.46	2.61	2.44	2.59	3.01
Custom feed mixing	.29	.30	.29	.30	.29	.30	.34
Fuel, lube, electricity	5.52	5.83	8.08	9.00	9.52	10.23	10.73
Machinery and building repairs	9.34	9.88	12.05	13.81	12.58	13.54	14.62
Hired labor	4.99	5.46	6.26	6.73	7.62	7.92	9.00
Total, variable cash expenses	90.40	107.79	120.90	131.69	133.66	123.35	128.87
General farm overhead	4.10	5.55	4.96	5.53	6.54	7.59	13.53
Taxes and insurance	11.45	11.76	12.37	13.28	16.09	15.27	16.15
Interest	8.13	11.82	10.15	11.29	17.08	18.10	30.30
Total, fixed cash expenses	23.68	29.13	27.48	30.10	39.71	40.96	59.98
Total, cash expenses	114.08	136.92	148.38	161.79	173.37	164.31	188.85
Value of production less cash expenses	26.31	37.50	-21.63	-42.76	-38.64	-17.40	55.70
Capital replacement	26.65	28.16	30.64	33.49	35.21	34.59	37.39
Value of production less cash expenses and capital replacement	-.34	9.34	-52.27	-76.25	-73.85	-51.99	18.31
=====							
Economic (full ownership) costs:							
Variable cash expenses	90.40	107.79	120.90	131.69	133.66	123.35	128.87
General farm overhead	4.10	5.55	4.96	5.53	6.54	7.59	13.53
Taxes and insurance	11.45	11.76	12.37	13.28	16.09	15.27	16.15
Capital replacement	26.65	28.16	30.64	33.49	35.21	34.59	37.39
Allocated returns to owned inputs:							
Return to operating capital	2.02	3.87	4.79	4.03	3.52	3.40	4.88
Return to other nonland capital	28.67	30.31	33.03	36.12	37.93	36.26	35.21
Land	26.93	31.87	45.00	54.40	61.81	69.09	73.03
Unpaid labor	18.21	20.42	23.95	25.41	28.37	37.42	45.58
Total, economic costs	208.43	239.72	275.64	303.95	323.13	326.97	354.64
Residual returns to management and risk	-68.04	-65.30	-148.89	-184.92	-188.40	-180.06	-110.09

Continued--



Table 58--U.S. cow-calf production costs, all sizes of operation, 1972-85--Continued

Item	1979	1980	1981	1982	1983	1984	1985
<u>Dollars per cow</u>							
Gross value of production:							
Steer calves	103.94	90.02	74.86	74.22	74.62	76.37	77.71
Heifer calves	61.51	53.27	44.02	44.25	43.80	44.36	46.22
Yearling steers	83.37	78.40	67.72	64.73	61.23	65.89	61.52
Yearling heifers	52.36	49.24	44.08	42.19	38.89	41.47	40.30
Cull cows	51.12	35.98	29.96	30.10	28.64	30.69	28.64
Total	352.30	306.91	260.64	255.49	247.18	258.78	254.39
Cash expenses:							
Feed--							
Grain	7.78	10.12	9.42	8.31	10.70	11.20	9.39
Silage	2.66	4.58	5.51	4.66	6.20	5.83	6.04
Protein supplements	12.34	17.28	18.21	17.26	18.13	18.69	16.00
Salt and minerals	2.65	2.13	2.41	2.40	2.52	2.62	2.69
Hay	29.86	32.03	40.23	41.47	38.99	43.34	42.96
Pasture	34.15	35.81	37.40	39.02	36.45	39.30	36.44
Public grazing	1.08	.68	.76	.75	.65	.71	.66
Crop residue (purchased)	.06	.07	.07	.07	.08	.08	.07
Total feed costs	90.58	102.70	114.01	113.94	113.72	121.77	114.25
Other--							
Veterinary and medicine	4.54	5.05	5.52	5.91	6.11	6.31	6.38
Livestock hauling	1.23	1.40	1.75	1.70	1.74	1.80	1.85
Marketing	3.58	3.81	3.86	3.90	4.00	4.10	4.21
Custom feed mixing	.38	.42	.44	.49	.47	.48	.49
Fuel, lube, electricity	14.02	19.23	21.72	21.30	19.54	16.58	16.00
Machinery and building repairs	16.04	17.60	19.31	21.17	22.09	21.58	22.51
Hired labor	10.46	11.72	13.41	13.02	13.48	13.72	13.98
Total, variable cash expenses	140.83	161.93	180.02	181.43	181.15	186.34	179.67
General farm overhead	22.06	21.94	20.68	19.47	19.26	24.13	22.43
Taxes and insurance	19.82	20.52	19.62	20.87	23.43	19.54	19.04
Interest	48.45	47.50	44.86	45.43	44.96	46.52	44.30
Total, fixed cash expenses	90.33	89.96	85.16	85.77	87.65	90.19	85.77
Total, cash expenses	231.16	251.89	265.18	267.20	268.80	276.53	265.44
Value of production less cash expenses	121.14	55.02	-4.54	-11.71	-21.62	-17.75	-11.05
Capital replacement	46.74	54.19	59.22	62.88	64.28	64.46	64.53
Value of production less cash expenses and capital replacement	74.40	.83	-63.76	-74.59	-85.90	-82.21	-75.58
Economic (full ownership) costs:							
Variable cash expenses	140.83	161.93	180.02	181.43	181.15	186.34	179.67
General farm overhead	22.06	21.94	20.68	19.47	19.26	24.13	22.43
Taxes and insurance	19.82	20.52	19.62	20.87	23.43	19.54	19.04
Capital replacement	46.74	54.19	59.22	62.88	64.28	64.46	64.53
Allocated returns to owned inputs:							
Return to operating capital	7.04	9.21	12.40	10.05	7.93	9.13	6.88
Return to other nonland capital	34.90	34.17	32.29	31.55	29.67	23.61	22.36
Land	81.78	92.95	94.57	92.86	83.72	66.15	54.86
Unpaid labor	55.24	65.29	72.11	71.71	74.68	76.73	78.27
Total, economic costs	408.41	460.20	490.91	490.82	484.12	470.09	448.04
Residual returns to management and risk	-56.11	-153.29	-230.27	-235.33	-236.94	-211.31	-193.63

Table 59--U.S. farrow-to-finish production costs, all sizes of operation, 1972-85

Item	1972	1973	1974	1975	1976	1977	1978
<u>Dollars per cwt</u>							
Gross value of production:							
Slaughter hogs	24.16	36.48	31.81	43.77	40.16	37.20	43.81
Cull sows	1.73	2.67	2.23	3.25	2.89	2.68	3.30
Total	25.89	39.15	34.04	47.02	43.05	39.88	47.11
=====							
Cash expenses:							
Feed--							
Grain	7.42	11.99	18.53	17.13	15.87	12.88	13.28
Protein supplements	6.94	15.10	11.14	9.12	9.35	11.18	10.56
Pasture	.02	.03	.03	.03	.03	.03	.03
Total feed costs	14.39	27.12	29.69	26.28	25.25	24.09	23.87
Other--							
Veterinary and medicine	.26	.27	.30	.41	.40	.40	.41
Livestock hauling	.04	.04	.05	.06	.07	.07	.08
Marketing	.19	.21	.23	.25	.29	.28	.33
Bedding	.05	.06	.09	.09	.08	.09	.09
Custom feed mixing	.00	.00	.00	.00	.00	.00	.00
Fuel, lube, and electricity	.51	.54	.74	.83	.88	.94	.99
Machinery and building repairs	1.06	1.13	1.25	1.37	1.54	1.54	1.60
Hired labor	.42	.46	.53	.57	.63	.67	.72
Manure credit	-.10	-.10	-.11	-.12	-.14	-.14	-.14
Total, variable cash expenses	16.83	29.73	32.78	29.73	29.00	27.94	27.95
General farm overhead	.87	.92	1.03	1.12	1.27	1.26	1.59
Taxes and insurance	.39	.40	.42	.45	.54	.52	.56
Interest	1.79	2.10	2.48	2.93	4.23	3.81	4.52
Total, fixed cash expenses	3.05	3.42	3.92	4.51	6.04	5.59	6.67
Total, cash expenses	19.88	33.15	36.70	34.24	35.04	33.53	34.62
Value production less cash expenses	6.00	6.00	-2.66	12.78	8.01	6.35	12.49
Capital replacement	2.66	2.99	2.29	4.20	5.10	4.67	5.12
Value of production less cash expenses and capital replacement	3.34	3.01	-4.95	8.58	2.91	1.68	7.37
=====							
Economic (full ownership) costs:							
Variable cash expenses	16.83	29.73	32.78	29.73	29.00	27.94	27.95
General farm overhead	.87	.92	1.03	1.12	1.27	1.26	1.59
Taxes and insurance	.39	.40	.42	.45	.54	.52	.56
Capital replacement	2.66	2.99	2.29	4.20	5.10	4.67	5.12
Allocated returns to owned inputs:							
Return to operating capital	.19	.53	.65	.46	.38	.38	.53
Return to other nonland capital	1.39	1.47	1.59	1.74	1.88	1.80	1.75
Land	.04	.05	.07	.09	.10	.11	.12
Unpaid labor	2.21	2.42	2.77	2.98	3.25	3.50	3.74
Total, economic costs	24.58	38.51	41.59	40.77	41.52	40.19	41.36
Residual returns to management and risk	1.31	.64	-7.56	6.25	1.53	-.31	5.75

Continued--

Table 59--U.S. farrow-to-finish production costs, all sizes of operation,  
1972-85--Continued

Item	1979	1980	1981	1982	1983	1984	1985
<u>Dollars per cwt</u>							
Gross value of production:							
Slaughter hogs	39.99	37.62	41.67	51.70	44.66	45.79	42.10
Cull sows	2.75	1.98	2.20	2.77	2.26	2.35	2.12
Total	42.74	39.60	43.87	54.47	46.92	48.14	44.22
=====							
Cash expenses:							
Feed--							
Grain	15.01	16.94	18.32	14.83	18.85	19.22	15.69
Protein supplements	11.67	11.68	12.27	11.40	12.19	11.26	9.13
Pasture	.03	.05	.05	.05	.04	.04	.03
Total feed costs	26.71	28.67	30.64	26.28	31.08	30.52	24.85
Other--							
Veterinary and medicine	.44	.47	.50	.51	.53	.54	.53
Livestock hauling	.09	.10	.12	.12	.13	.13	.13
Marketing	.30	.30	.33	.36	.33	.35	.33
Bedding	.11	.12	.18	.15	.15	.15	.15
Custom feed mixing	.00	.00	.00	.00	.00	.00	.00
Fuel, lube, and electricity	1.29	1.77	2.06	2.06	1.96	1.81	1.74
Machinery and building repairs	1.77	2.06	2.25	2.35	2.45	2.34	2.38
Hired labor	.79	.85	.99	.98	1.08	1.23	1.34
Manure credit	-.15	-.19	-.20	-.20	-.19	-.21	-.20
Total, variable cash expenses	31.35	34.15	36.87	32.61	37.52	36.86	31.25
General farm overhead	1.63	1.72	2.12	2.66	2.47	2.37	2.14
Taxes and insurance	.65	.61	.67	.69	.78	.70	.83
Interest	4.55	4.75	5.85	8.28	5.65	7.00	5.41
Total, fixed cash expenses	6.83	7.08	8.64	11.63	8.90	10.07	8.38
Total, cash expenses	38.18	41.23	45.51	44.24	46.42	46.93	39.63
Value production less cash expenses	4.56	-1.63	-1.64	10.23	.50	1.21	4.59
Capital replacement	5.98	5.15	5.59	5.81	6.19	5.68	5.65
Value of production less cash expenses and capital replacement	-1.42	-6.78	-7.23	4.42	-5.69	-4.47	-1.06
=====							
Economic (full ownership) costs:							
Variable cash expenses	31.35	34.15	36.87	32.61	37.52	36.86	31.25
General farm overhead	1.63	1.72	2.12	2.66	2.47	2.37	2.14
Taxes and insurance	.65	.61	.67	.69	.78	.70	.83
Capital replacement	5.98	5.15	5.59	5.81	6.19	5.68	5.65
Allocated returns to owned inputs:							
Return to operating capital	.79	.97	1.27	.90	.82	.90	.60
Return to other nonland capital	1.73	1.70	1.60	1.57	1.47	1.17	1.11
Land	.13	.15	.15	.14	.13	.10	.08
Unpaid labor	4.09	4.41	4.90	4.48	4.78	4.50	4.52
Total, economic costs	46.35	48.86	53.17	48.87	54.16	52.28	46.18
Residual returns to management and risk	-3.61	-9.26	-9.30	5.60	-7.24	-4.14	-1.96



Table 60--U.S. feeder pig production costs, all sizes of operation, 1972-85

Item	1972	1973	1974	1975	1976	1977	1978
<u>Dollars per cwt</u>							
Gross value of production:							
Feeder pigs	39.88	60.22	52.52	72.26	58.87	61.42	78.83
Cull sows	4.57	7.06	5.87	8.57	6.78	7.07	8.78
Total	44.45	67.28	58.40	80.83	65.65	68.49	87.61
=====							
Cash expenses:							
Feed--							
Grain	9.35	15.11	23.35	21.59	19.51	16.23	16.99
Protein supplements	9.32	20.26	14.94	12.24	12.90	15.00	14.24
Pasture	.14	.16	.17	.17	.21	.17	.18
Total feed costs	18.81	35.54	38.46	34.00	32.62	31.40	31.41
Other--							
Veterinary and medicine	.90	.92	1.05	1.41	1.37	1.38	1.41
Livestock hauling	.07	.08	.09	.10	.11	.12	.13
Marketing	.88	.93	1.03	1.13	1.29	1.27	1.46
Bedding	.13	.16	.21	.22	.20	.22	.24
Custom feed mixing	.72	.77	.85	.93	.97	1.05	1.13
Fuel, lube, and electricity	1.90	2.01	2.78	3.10	3.27	3.52	3.69
Machinery and building repairs	2.22	2.35	2.61	2.87	3.22	3.22	3.34
Hired labor	.83	.91	1.04	1.12	1.23	1.32	1.41
Manure credit	-.07	-.07	-.08	-.09	-.11	-.10	-.10
Total, variable cash expenses	26.39	43.58	48.04	44.78	44.17	43.40	44.12
General farm overhead	1.42	1.50	1.67	1.83	1.85	2.06	2.82
Taxes and insurance	1.02	1.05	1.10	1.18	1.20	1.36	1.47
Interest	3.08	3.61	4.26	5.05	6.47	6.56	8.44
Total, fixed cash expenses	5.52	6.16	7.03	8.07	9.52	9.98	12.73
Total, cash expenses	31.92	49.74	55.07	52.85	53.69	53.38	56.85
Value of production less cash expenses	12.54	17.54	3.32	27.98	11.96	15.11	30.76
Capital replacement	5.81	6.52	4.99	9.17	9.47	10.19	11.26
Value of production less cash expenses and capital replacement	6.73	11.02	-1.67	18.81	2.49	4.92	19.50
=====							
Economic (full ownership) costs:							
Variable cash expenses	26.39	43.58	48.04	44.78	44.17	43.40	44.12
General farm overhead	1.42	1.50	1.67	1.83	1.85	2.06	2.82
Taxes and insurance	1.02	1.05	1.10	1.18	1.20	1.36	1.47
Capital replacement	5.81	6.52	4.99	9.17	9.47	10.19	11.26
Allocated returns to owned inputs:							
Return to operating capital	.29	.78	.95	.69	.58	.60	.84
Return to other nonland capital	3.24	3.42	3.72	4.07	4.39	4.20	4.08
Land	.21	.25	.37	.44	.50	.56	.59
Unpaid labor	8.45	9.25	10.59	11.40	12.46	13.41	14.34
Total, economic costs	46.83	66.36	71.43	73.57	74.62	75.78	79.52
Residual returns to management and risk	-2.38	.92	-13.04	7.27	-8.97	-7.29	8.09

Continued--

Table 60--U.S. feeder pig production costs, all sizes of operation, 1972-85--Continued

Item	1979	1980	1981	1982	1983	1984	1985
<u>Dollars per cwt</u>							
Gross value of production:							
Feeder pigs	58.43	51.28	60.87	85.67	61.73	66.60	66.48
Cull sows	7.52	6.85	7.62	9.56	7.78	8.04	7.25
Total	65.95	58.13	68.49	95.23	69.51	74.64	73.73
=====							
Cash expenses:							
Feed--							
Grain	19.07	21.54	23.20	18.73	23.79	24.00	19.50
Protein supplements	15.83	17.86	18.77	17.59	18.63	17.40	14.61
Pasture	.20	.22	.22	.22	.19	.17	.15
Total feed costs	35.10	39.62	42.19	36.54	42.61	41.57	34.26
Other--							
Veterinary and medicine	1.51	1.62	1.55	1.62	1.67	1.53	1.47
Livestock hauling	.14	.16	.18	.19	.20	.20	.20
Marketing	1.36	1.35	1.49	1.59	1.48	1.62	1.51
Bedding	.27	.30	.46	.38	.39	.37	.37
Custom feed mixing	1.26	1.40	1.46	1.46	1.44	1.33	1.24
Fuel, lube, and electricity	4.82	6.61	7.68	7.73	7.49	6.80	6.69
Machinery and building repairs	3.70	4.31	4.72	4.93	5.14	4.78	4.82
Hired labor	1.54	1.66	1.87	1.86	2.05	2.62	2.90
Manure credit	-.11	-.14	-.15	-.15	-.15	-.16	-.15
Total, variable cash expenses	49.59	56.89	61.45	56.15	62.32	60.66	53.31
General farm overhead	2.40	2.42	3.16	4.17	4.15	4.85	4.79
Taxes and insurance	1.71	1.63	1.77	1.89	2.10	1.88	1.88
Interest	7.05	7.00	9.17	14.56	8.43	10.84	10.84
Total, fixed cash expenses	11.16	11.05	14.10	20.62	14.68	17.57	17.51
Total, cash expenses	60.75	67.94	75.55	76.77	77.00	78.23	70.82
Value of production less cash expenses	5.20	-9.81	-7.06	18.46	-7.49	-3.59	2.91
Capital replacement	13.36	10.77	11.82	12.36	13.35	11.90	11.90
Value of production less cash expenses and capital replacement	-8.16	-20.58	-18.88	6.10	-20.84	-15.49	-8.99
=====							
Economic (full ownership) costs:							
Variable cash expenses	49.59	56.89	61.45	56.15	62.32	60.66	53.31
General farm overhead	2.40	2.42	3.16	4.17	4.15	4.85	4.79
Taxes and insurance	1.71	1.63	1.77	1.89	2.10	1.88	1.88
Capital replacement	13.36	10.77	11.82	12.36	13.35	11.90	11.90
Allocated returns to owned inputs:							
Return to operating capital	1.24	1.62	2.12	1.56	1.36	1.49	1.02
Return to other nonland capital	4.04	3.96	3.74	3.66	3.44	2.74	2.74
Land	.67	.75	.77	.72	.64	.50	.41
Unpaid labor	15.67	16.89	18.37	16.86	17.95	16.79	16.79
Total, economic costs	88.68	94.93	103.19	97.36	105.32	100.80	92.84
Residual returns to management and risk	-22.73	-36.80	-34.70	-2.13	-35.81	-26.16	-19.11
-----							

Table 61--U.S. feeder pig finishing production costs, all sizes of operation, 1972-85

Item	1972	1973	1974	1975	1976	1977	1978
<u>Dollars per cwt</u>							
Gross value of production:							
Slaughter hogs	26.02	39.29	34.26	47.14	47.98	40.07	47.82
=====							
Cash expenses:							
Feeders--							
Feeder pigs	10.34	13.95	9.81	17.48	23.71	13.82	19.31
Feed--							
Grain	6.66	10.75	16.61	15.36	12.79	11.55	10.47
Protein supplements	5.61	12.21	9.01	7.38	6.98	9.04	8.08
Pasture	.01	.01	.01	.01	.01	.01	.01
Total feed costs	12.28	22.97	25.63	22.75	19.78	20.60	18.56
Other--							
Veterinary and medicine	.22	.23	.26	.35	.34	.34	.35
Livestock hauling	.05	.06	.07	.08	.08	.09	.09
Marketing	.23	.25	.28	.30	.35	.34	.39
Bedding	.03	.04	.06	.06	.05	.06	.06
Custom feed mixing	.06	.06	.07	.07	.07	.08	.08
Fuel, lube, and electricity	.39	.42	.58	.64	.68	.73	.77
Machinery and building repairs	.70	.74	.82	.90	1.01	1.01	1.05
Hired labor	.17	.19	.21	.23	.25	.27	.29
Manure credit	-.07	-.07	-.08	-.09	-.11	-.10	-.10
Total, variable cash expenses	24.41	38.83	37.69	42.77	46.21	37.24	40.85
General farm overhead	.86	.91	1.01	1.10	1.39	1.24	1.58
Taxes and insurance	1.28	1.32	1.39	1.49	1.54	1.71	1.93
Interest	1.74	2.04	2.41	2.85	4.55	3.70	4.50
Total, fixed cash expenses	3.88	4.26	4.80	5.44	7.48	6.65	8.01
Total, cash expenses	28.29	43.09	42.49	48.20	53.69	43.89	48.86
Value of production less cash expenses	-2.27	-3.80	-8.23	-1.06	-5.71	-3.82	-1.04
Capital replacement	1.41	1.59	1.22	2.23	2.65	2.48	2.47
Value of production less cash expenses and capital replacement	-3.68	-5.39	-9.44	-3.29	-8.36	-6.30	-3.51
=====							
Economic (full ownership) costs:							
Variable cash expenses	24.41	38.83	37.69	42.77	46.21	37.24	40.85
General farm overhead	.86	.91	1.01	1.10	1.39	1.24	1.58
Taxes and insurance	1.28	1.32	1.39	1.49	1.54	1.71	1.93
Capital replacement	1.41	1.59	1.22	2.23	2.65	2.48	2.47
Allocated returns to owned inputs:							
Return to operating capital	.18	.46	.50	.44	.41	.34	.52
Return to other nonland capital	.75	.79	.86	.94	1.02	.97	.94
Land	.01	.02	.02	.03	.03	.04	.04
Unpaid labor	.67	.73	.84	.90	.99	1.06	1.14
Total, economic costs	29.57	44.64	43.52	49.89	54.24	45.08	49.46
Residual returns to management and risk	-3.55	-5.36	-9.26	-2.75	-6.26	-5.01	-1.64

Continued--



Table 61--U.S. feeder pig finishing production costs, all sizes of operation,  
1972-85--Continued

Item	1979	1980	1981	1982	1983	1984	1985
<u>Dollars per cwt</u>							
Gross value of production:							
Slaughter hogs	46.92	39.30	43.86	54.53	47.34	48.42	44.61
=====							
Cash expenses:							
Feeder--							
Feeder pigs	23.18	13.16	17.54	22.40	20.05	17.33	18.76
Feed--							
Grain	11.33	11.65	12.59	10.19	12.97	13.21	10.79
Protein supplements	9.04	6.55	6.89	6.38	6.81	6.31	5.17
Pasture	.01	.02	.02	.02	.02	.02	.01
Total feed costs	20.38	18.22	19.50	16.59	19.80	19.54	15.97
Other--							
Veterinary and medicine	.37	.40	.43	.44	.46	.46	.46
Livestock hauling	.11	.12	.14	.15	.16	.16	.16
Marketing	.36	.36	.39	.42	.39	.42	.39
Bedding	.07	.08	.11	.10	.10	.10	.10
Custom feed mixing	.09	.10	.10	.09	.09	.08	.07
Fuel, lube, and electricity	1.01	1.38	1.50	1.49	1.38	1.15	1.05
Machinery and building repairs	1.16	1.35	1.50	1.59	1.66	1.58	1.63
Hired labor	.32	.34	.38	.36	.39	.40	.42
Manure credit	-.11	-.14	-.15	-.16	-.15	-.16	-.15
Total, variable cash expenses	46.94	35.37	41.44	43.47	44.33	41.06	38.86
General farm overhead	1.76	1.68	2.08	2.68	1.99	2.74	2.44
Taxes and insurance	3.18	.32	.36	.39	.42	.40	.43
Interest	4.94	4.63	5.90	8.27	5.73	7.03	5.45
Total, fixed cash expenses	9.88	6.63	8.34	11.34	8.14	10.17	8.32
Total, cash expenses	56.82	42.00	49.78	54.81	52.47	51.23	47.18
Value of production less cash expenses	-9.90	-2.70	-5.92	-.28	-5.13	-2.81	-2.57
Capital replacement	2.91	2.51	2.77	2.92	3.04	2.93	3.00
Value of production less cash expenses and capital replacement	-12.81	-5.21	-8.69	-3.20	-8.17	-5.74	-5.57
=====							
Economic (full ownership) costs:							
Variable cash expenses	46.94	35.37	41.44	43.47	44.33	41.06	38.86
General farm overhead	1.76	1.68	2.08	2.68	1.99	2.74	2.44
Taxes and insurance	3.18	.32	.36	.39	.42	.40	.43
Capital replacement	2.91	2.51	2.77	2.92	3.04	2.93	3.00
Allocated returns to owned inputs:							
Return to operating capital	.78	.67	.95	.80	.65	.67	.50
Return to other nonland capital	.94	.92	.87	.85	.80	.63	.60
Land	.04	.05	.05	.05	.04	.03	.03
Unpaid labor	1.24	1.34	1.46	1.34	1.42	1.37	1.38
Total, economic costs	57.80	42.86	49.98	52.50	52.69	49.83	47.23
Residual returns to management and risk	-10.88	-3.56	-6.12	2.03	-5.35	-1.41	-2.62
-----							

Table 62--U.S. sheep production costs, all sizes of operation, 1972-85

Item	1972	1973	1974	1975	1976	1977	1978
<u>Dollars per ewe</u>							
Gross value of production:							
Slaughter lambs	9.85	12.00	13.00	14.53	15.65	17.46	19.91
Feeder lambs	6.99	8.58	8.06	9.27	11.35	12.57	17.72
Cull ewes	1.72	3.30	2.63	2.56	3.30	3.45	4.70
Wool	2.60	6.15	4.39	3.32	4.88	5.35	5.54
Wool payment	3.88	.00	1.35	2.86	.66	2.83	3.09
Unshorn lamb payment	.75	.00	.26	.55	.13	.55	.66
Total	25.80	30.03	29.71	33.09	35.97	42.22	51.62
Cash expenses:							
Feed--							
Grain	1.11	1.79	2.77	2.56	2.36	1.92	1.99
Protein supplements	1.76	3.82	2.82	2.31	2.31	2.83	2.85
Salt and minerals	.13	.14	.15	.17	.19	.21	.23
Hay	2.24	2.55	2.99	3.74	3.89	2.89	2.69
Pasture	1.81	2.07	2.14	2.14	2.19	2.18	2.41
Public grazing	1.25	1.31	1.41	1.41	1.65	.73	.73
Crop residue	.05	.05	.05	.05	.05	.05	.05
Total feed costs	8.34	11.74	12.34	12.39	12.64	10.82	10.95
Other--							
Veterinary and medicine	.60	.62	.59	.62	.59	.61	.66
Livestock hauling	.66	.73	.66	.72	.66	.71	.76
Marketing	.15	.16	.15	.16	.15	.16	.17
Ram death loss	.13	.14	.15	.17	.18	.19	.26
Shearing and tagging	.58	.62	.68	.75	.79	.84	.90
Fuel, lube, and electricity	.50	.53	.74	.82	.87	.93	.98
Machinery and building repairs	2.57	2.62	2.82	2.98	2.87	1.22	1.32
Hired labor	2.72	2.98	3.41	3.67	4.15	4.32	4.62
Miscellaneous	.44	.47	.52	.57	.60	.64	.69
Total, variable cash expenses	16.71	20.61	22.07	22.84	23.49	20.44	21.31
General farm overhead	1.05	1.42	1.27	1.41	1.67	1.94	2.54
Taxes and insurance	.90	.92	.97	1.04	1.26	1.19	1.20
Interest	1.11	1.62	1.39	1.55	2.34	2.48	4.17
Total, fixed cash expenses	3.06	3.96	3.63	4.00	5.27	5.61	7.92
Total, cash expenses	19.76	24.57	25.70	26.84	28.76	26.05	29.22
Value of production less cash expenses	6.03	5.46	4.01	6.26	7.21	16.17	22.40
Capital replacement	2.19	2.32	2.52	2.75	2.90	2.84	3.89
Value of production less cash expenses and capital replacement	3.84	3.14	1.49	3.50	4.32	13.32	18.51
Economic (full ownership) costs:							
Variable cash expenses	16.71	20.61	22.07	22.84	23.49	20.44	21.31
General farm overhead	1.05	1.42	1.27	1.41	1.67	1.94	2.54
Taxes and insurance	.90	.92	.97	1.04	1.26	1.19	1.20
Capital replacement	2.19	2.32	2.52	2.75	2.90	2.84	3.89
Allocated returns to owned inputs:							
Returns to operating capital	.37	.74	.87	.70	.62	.56	.81
Returns to other nonland capital	1.58	1.67	1.82	1.99	2.09	2.05	2.81
Land	3.10	3.76	4.86	5.59	6.07	6.44	6.87
Unpaid labor	4.12	4.62	5.42	5.75	6.42	6.58	6.75
Total, economic costs	30.02	36.05	39.79	42.07	44.52	42.05	46.16
Residual returns to management and risk	-4.22	-6.02	-10.08	-8.98	-8.55	.17	5.46

Continued--

Table 62--U.S. sheep production costs, all sizes of operation, 1972-85--Continued

Item	1979	1980	1981	1982	1983	1984	1985
<u>Dollars per ewe</u>							
Gross value of production:							
Slaughter lambs	21.03	20.46	16.03	16.60	16.39	19.93	21.58
Feeder lambs	18.41	15.74	13.30	13.49	12.30	15.02	18.48
Cull ewes	5.52	3.55	3.43	3.05	2.17	3.20	6.06
Wool	6.42	6.55	7.45	6.28	6.72	8.81	6.84
Wool payment	3.29	3.52	4.61	6.28	7.75	9.47	10.99
Unshorn lamb payment	.71	.76	.88	1.50	1.56	1.81	2.21
Total	55.37	50.58	45.70	47.20	46.89	58.24	66.16
Cash expenses:							
Feed--							
Grain	2.24	2.56	2.13	2.14	2.38	2.52	2.01
Protein supplements	3.21	3.64	3.38	3.16	3.60	3.39	3.40
Salt and minerals	.26	.32	.35	.37	.38	.38	.40
Hay	2.45	2.93	3.53	3.71	3.65	3.74	3.90
Pasture	2.70	3.05	3.19	3.11	3.16	3.43	3.31
Public grazing	.93	1.13	1.11	.91	.70	.71	.67
Crop residue	.04	.05	.06	.05	.06	.06	.05
Total feed costs	11.84	13.68	13.75	13.45	13.93	14.23	13.74
Other--							
Veterinary and medicine	.73	.83	.91	.98	.99	1.04	1.05
Livestock hauling	.87	1.00	1.12	1.18	1.20	1.25	1.28
Marketing	.19	.22	.24	.26	.27	.28	.29
Ram death loss	.34	.33	.31	.29	.28	.27	.27
Shearing and tagging	.98	1.06	1.14	1.18	1.21	1.23	1.24
Fuel, lube, and electricity	1.28	1.75	1.98	1.93	1.82	1.49	1.53
Machinery and building repairs	1.45	1.59	1.74	2.19	2.29	2.26	2.39
Hired labor	5.05	5.44	5.83	6.05	6.22	6.34	6.49
Miscellaneous	.77	.87	.96	1.02	1.04	1.08	1.12
Total, variable cash expenses	23.51	26.77	27.98	28.53	29.25	29.47	29.40
General farm overhead	3.08	3.21	3.22	4.47	2.86	3.74	3.25
Taxes and insurance	1.45	1.55	1.57	1.80	1.82	1.70	1.82
Interest	5.91	6.13	6.73	6.55	5.32	5.99	6.87
Total, fixed cash expenses	10.45	10.89	11.52	12.82	10.00	11.43	11.94
Total, cash expenses	33.96	37.66	39.50	41.35	39.25	40.90	41.34
Value of production less cash expenses	21.41	12.92	6.20	5.85	7.64	17.34	24.82
Capital replacement	4.90	5.12	5.69	6.58	6.95	7.38	7.61
Value of production less cash expenses and capital replacement	16.51	7.80	.51	-.73	.69	9.96	17.21
Economic (full ownership) costs:							
Variable cash expenses	23.51	26.77	27.98	28.53	29.25	29.47	29.40
General farm overhead	3.08	3.21	3.22	4.47	2.86	3.74	3.25
Taxes and insurance	1.45	1.55	1.57	1.80	1.82	1.70	1.82
Capital replacement	4.90	5.12	5.69	6.58	6.95	7.38	7.61
Allocated returns to owned inputs:							
Returns to operating capital	1.18	1.52	1.93	1.58	1.28	1.44	1.13
Returns to other nonland capital	3.54	4.63	4.11	4.52	4.36	4.95	2.72
Land	7.95	9.44	9.75	10.13	9.26	8.86	6.56
Unpaid labor	7.38	6.40	6.97	7.14	7.33	7.70	7.77
Total, economic costs	52.98	58.64	61.23	64.75	63.11	65.24	60.26
Residual returns to management and risk	2.38	-8.06	-15.53	-17.55	-16.22	-7.00	5.90



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